Journal of the Association of American Medical Colleges

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JOURNAL
OF THE
Association of American Medical Colleges

Volume 5 SEPTEMBER, 1930 Number 5

Correlation of Qualifying Examinations*

WALTER L. BIERRING
President, National Board of Medical Examiners

With the advancement of medical education and its special applications, qualifying tests have assumed a greater importance; in consequence, examinations have multiplied to the extent of rapidly becoming a distinct burden to students and graduates of medicine.

How best to train the hands of the young is a world old problem. Examinations and the testing of knowledge have ever been an essential part of this training.

Osler once stated that examinations may be the best or the worst part of an education, and added, further, that they can be very helpful if an integral part of the training, but they have been known to be the intellectual ruin of many good men.

There is still much in our present educational system to warrant this contention, that it is largely directed toward one end, the passing of examinations, rather than the end of education. Examinations should be regarded as an accessory in its acquisition.

Art of Examination

More recently President Lowell has written in a most interesting way on the "Art of Examination," claiming that this art has not progressed very far in this country. He contends that we have not considered with sufficient care the object, scope, and utility of examinations. He ascribes to them three distinct objects; (1) To measure progress, (2) as a direct means of education; and (3) to set a standard of achievement. Perhaps some of our difficulties are due to paying too much attention to the first object without proper regard for the importance of the last two.

Purpose of Examination

While the primary purpose of an examination is a test of knowledge, it is intended principally to test a student's capacity for thinking, reason-

*Read at the Fortieth Annual Meeting of the Association held in New York City, November 7-9, 1929.

ing power, and application of knowledge gained from any source pertaining to the particular subject in which he is being examined. There is a prevailing tendency to grade medical schools and their systems of teaching by the published examination results. The percentage of failures in State Board or other qualifying examinations often constitutes the principal means by which the standard of a particular school is obtained.

The Journal of the American Medical Association publishes each year a State Board number in which are collected statistics based on reports of examinations held by the various state medical boards during the previous calendar year. This continuous publicity no doubt has led to a general improvement and greater uniformity in educational standards, and in methods of examination. Nevertheless, the percentage of failures remains relatively high. During the past five years it has ranged for all candidates examined from 12 to 15.3 per cent. The percentage of failures for recent graduates is comparatively lower, as low as 6 per cent.

Results of Examinations in New York

An interesting report was recently published by Dr. Harold Rypins, Secretary of the New York State Board of Medican Examiners, regarding the licensing examinations held by this board, covering the past three years, with a comparison of the ratings of American and foreign applicants. Of 3,262 candidates examined, 1,306 were from New York schools of which only 28 failed or 2.1 per cent; 1,098 were from other state schools, with 157 failures, or 14.3 per cent; and 858 were graduates from foreign countries, including Canada, of which 355 failed, or 41.3 per cent.

The high percentage of failures among foreigners is explained partly because of difficulty with the language, and that foreign graduates usually take the state licensing examinations after they have been out of medical school from five to ten years. The question naturally arises whether the graduates of American medical schools are better prepared.

Results of National Board Examinations

At the June, 1929, examination of the National Board in Part I which comprises the six fundamental medical sciences, 362 candidates passed and 41 failed, or 10.1 per cent; in Part II consisting of the four clinical subjects 256 passed and 29 failed, or 10.1 per cent, and in Part III, which is entirely practical and oral, there were 289 successful candidates and 6 per cent of failures.

In the British examining boards of London, Edinburgh and Ireland, the results during the past five years show a usually high mortality, particularly in the two clinical subjects of medicine and surgery; 38 per cent in the former and 42 per cent in the latter.

This chasm which seems to exist between education and examination is even more strongly emphasized by a study of the results of the final examination for the Fellowship degree of the Royal College of Surgeons of England. This is a qualification prized more than any other, and sought only by the very best men yet the failures range from 43 to 69 per cent. The severity of the test may offer some explanation for these results, yet they indicate to what extent the teacher and student, or both, are out of touch with the examiner.

It is possible that our methods are at fault, yet it seems as if there should be better harmony between qualifying examinations and the present scheme of education.

Simplification of Examinations

Aside from the need of a better correlation of the various qualifying tests as conducted by medical schools and the different examining boards, there is an urgent demand for simplification and a reduction in the number of these examinations as far as possible. The important question, then, arises what manner of reciprocal agreement between the several qualifying bodies can be brought about, that will best accomplish this purpose.

The National Board Examinations

The National Board of Medical Examiners was established in 1915 for the principal purpose of developing a comprehensive examination in keeping with the best medical training in this country. It is representative in its membership of the Association of American Medical Colleges, the Council on Medical Education and Hospitals of the American Medical Association, the Federation of State Medical Boards, and the three Federal Medical Services.

Its examination combines the written with oral and clinical tests; Part I consisting of the six fundamental sciences of anatomy, physiology, biochemistry, pathology, bacteriology and pharmacology, is taken at the completion of these subjects in the second or third year of the medical course. Part II comprising the four clinical sciences of medicine, surgery, obstetrics and gynecology, and public health, to be taken after their completion in the medical school. These two written examinations are held in any Class A medical school in the United States and Canada, in charge of proctors appointed by the Dean of the par-

ticular school. The final or Part III examination is taken after the completion of one year's service in an approved hospital or clinical laboratory and consists of a comprehensive clinical, laboratory and oral examination covering a period of four days. These are conducted by a subsidiary board of examiners in the following centers, Boston, New Haven, New York, Philadelphia, Baltimore, Washington, Nashville, New Orleans, Galveston, Cleveland, Chicago, Minneapolis, Iowa City, Denver, Portland, San Francisco and Los Angeles.

The written examination questions and general conduct of the final Part III examination are under the supervision of the Examination Committee, consisting at present of Dr. O. H. Perry Pepper, Philadelphia, Chairman; Dr. Otto Folin, Boston, Dr. W. S. Leathers, Nashville, Dr. H. T. Karsner, Cleveland, and Dr. J. S. Rodman, Philadelphia.

Every set of written questions is carefully scrutinized and the type and character of the examination conforms as far as possible with the highest medical training of the day.

Reciprocal Status of Examination

That this examination has been endorsed and the certificate of the National Board accepted by forty State Medical Boards in the United States indicates that it fulfills satisfactorily the requirements of a licensure examination. There is every reason to expect that the remaining eight states of Michigan, Wisconsin, Indiana, Louisiana, Texas, Arkansas, Kansas and Montana, will add their endorsement within the next two or three years. When this has been accomplished a general qualifying examination will have been established, expressive of a standard of achievement and the highest type of medical training in this country.

As the Dominion Council of Canada adopts an equivalent or combined written or oral examination, or as now seems likely, a Conjoint Examining Board of Canada is formed, a reciprocal agreement between Canada and the United States on the basis of the National Board examination may be considered.

Supervision of Medical Training

The Federation of State Medical Boards at its last meeting in Chicago took the important step of delegating all matters of curriculum and medical training to the Association of American Medical Colleges, reserving for its principal function the determining of fitness to practice medicine and the enforcement of regulatory measures. In accordance with this action it is proper to expect that state examining boards will

gradually accept, in part, at least, the medical school record in lieu of the examination now required for licensure.

A significant step in this direction is the recent action of the New York State Board of Medical Examiners to dispense with the examination in the fundamental medical sciences as such and give instead one comprehensive examination in which questions on the application of the fundamental sciences are included with those on the clinical branches.

The National Board is very willing to follow a similar plan with reference to the acceptance of medical school records, but will not do so until the State Boards have instituted the same.

A simplification of qualifying tests is on trial in several leading medical schools. At the Yale University School of Medicine only two general comprehensive examinations are now given, one at the completion of all preclinical studies and the other for graduation from the school.

A Plan of Correlation

A further plan of correlation suggested is the acceptance of the National Board examination by the medical schools. This would apply only to the written tests in the fundamental medical and clinical sciences. This suggestion has gained support by the recent action of the College of Medical Evangelists of Loma Linda and Los Angeles, California. In the next college announcement will appear the statement that all students admitted to this college will automatically register as candidates for the certificate of Diplomate of the National Board of Medical Examiners, and the grades obtained in the National Board examination will be regarded as the final Medical College grades in the particular subjects concerned.

A similar plan has been previously proposed by the Deans of two of the leading medical schools in the Middle West.

There is every indication that a distinct movement for the simplification and better correlation of final qualifying tests is under way with the solution of the problem not so far distant. Among leading medical educators and examiners there is a unity of objective that no person should submit to a final examination more than once in the same subject.

Strip Film Photography as an Aid in Medical Teaching

FRANK R. KRUSEN
Associate Dean, Temple University School of Medicine

Definition: By strip film photography is meant the making, for projection purposes, of single photographic exposures, usually in series, on strips of standard motion picture film.

For years, educators have been striving to present lectures in a manner that would render them readily understandable to the student. It is obvious that when an object or method is visualized by a student, he will easily grasp the subject under discussion, and he will retain it in his mind for a long period of time. A picture, in an instant, will make perfectly clear a point which a lengthy description would not make plain. For this reason, many methods of illustrating lectures have been devised.

Methods of Illustrating Lectures

In addition to the chart and the lantern slide, the motion picture has recently been used for purposes of illustration, with splendid results.

We are now suggesting an additional method: strip film photography and projection, which, we believe, should largely replace charts and lantern slides, and which should serve as an adjunct to, but not replace, motion picture illustration of lectures.

All the old methods of illustrating lectures have their shortcomings. Charts are cumbersome and expensive. They are difficult to make and they require large storage space. Lantern slides are rather bulky, fairly expensive, and very easily broken. Slides must be stored in special containers. They are readily disarranged. It may be quite difficult to refer to a certain slide, once it has been placed aside during the course of a lecture.

Motion pictures have a great many advantages over other forms of lecture illustration. There are, however, some disadvantages. Skilled technicians are required to manufacture them. They keep moving at a constant speed when the lecturer may desire to go slowly to discuss a certain point, or when the student may desire a more prolonged view of a certain procedure. Motion pictures can not be turned back if the student misses a certain point, the whole film must be rewound and again displayed.

The newer types of motion picture machines, however, can be stopped almost instantly in order that the lecturer may discuss at length

a certain illustration. In addition, the element of motion frequently makes a question or theme more readily comprehendable to the student. This fact has been demonstrated. Dr. W. Estelle Lee* has told of a test conducted by psychologists at the Army Medical School, at Fort Oglethorpe, in which three groups of students were given the same series of lectures. The first group was given the oral lectures alone. Their grades averaged just above passing. The second group was given the same collection of oral lectures, illustrated with lantern slides. Their grades averaged just above eighty. The third group was given the same oral lectures, illustrated with motion pictures. Their grades averaged almost ninety.

It is not our thought that the method of illustrating lectures about to be described can be offered as a substitute for motion pictures, but that it offers a much more economical method of illustrating lectures, and one that more nearly approaches motion pictures than the other forms of lecture illustration.

There are certain features of strip film photography that render it more valuable than ordinary motion pictures. Dr. W. Wayne Babcock† has made the observation that motion pictures are too easily observed by the student, who sits back and makes no effort to grasp the detail of the picture. For this reason, Dr. Babcock feels that motion pictures are not so valuable for teaching as it was at first thought they would be.

The ideal, of course, is the slow motion picture, which will give the student time to grasp each detail. Slow motion pictures, however, are extremely expensive and difficult to make. It is in this field that strip film photography shows its greatest possibilities for, by making a series of still pictures at two-second intervals, one can show each phase in a technical procedure, in such a manner that the student will grasp each detail just as he would if he were observing a slow motion picture. In addition, these pictures can be produced at very low cost by amateurs.

The Strip Film Method

A few months ago, at the suggestion and with the aid of Dr. John I. Fanz, of the Department of Pathology of Temple University School of Medicine, we began to produce illustrations for lectures by making single exposures on standard motion picture film. The idea was not new, since various types of cameras, special strips of film, and special projectors were available, and they had been used in other teaching fields, as well as for commercial and home use. A few films of this

*Personal communication—Dr. W. Estelle Lee.
†Personal communication—Dr. W. Wayne Babcock.

type for medical teaching, has been made by commercial organizations. As far as we know, however, this method of illustrating medical lectures has not received the universal adoption which it merits.

Strip Film Photography

The camera we use is small enough to be carried in one's pocket; and yet, even in the hands of the mere amateur, it takes very clear pictures. It accommodates a strip of film long enough to make fifty single exposures. It is so constructed that exposures can be made at very short intervals, thus permitting the photographing of each step in a technical procedure without delay. The film, consisting of fifty frames, may then be developed. If desired, two or more strips of negative film may be spliced and then printed on a single strip of positive film; thus, a hundred or more pictures may be placed on a single strip of film. The lecturer, however, will rarely require more than a hundred pictures for a single lecture. The object to be photographed is usually illuminated with two one-thousand watt lamps, although this additional lighting is not necessary if time exposures are made.

Titles

Titles or descriptions may be supplied very easily by photographing a title board; a black, slotted board on which white letters are placed, small tongues on the letters fitting into the slots on the board.

These titles may be photographed in their proper location on the strip at the time when the pictures are being made.

Probably a better method is to take the pictures and titles separately, especially when a technical procedure is being photographed, when one does not wish to wait while each title is being set up.

At the time the pictures are taken, a blank may be left wherever a title is desired.

The titles are then photographed, the exposures being so made that they coincide with the blank spaces on the picture film. The picture negative and the title negative are then superimposed, and a single positive print made. This positive print will then contain the titles and pictures in their proper order.

The advantage of this method is that a slightly different technic is used for developing titles than that used for developing pictures and each will be clearer if developed separately.

Reproduction of Charts, Tables, Etc.

By means of a special apparatus, charts, tables, photomicrographs, illustrations from books, and the like may be reproduced on the strip

film, a suitable auxiliary lens being placed at the proper distance between the camera and the object to be photographed.

Strip Film Projection

A special projector is used and if it is sufficiently powerful, the picture on the screen can be made large enough for all practical purposes. The film is the same size as that used in motion picture theatres, and the screen reproductions may be just as large. For small classes, a small, readily portable projector is quite satisfactory. Such a projector may be obtained at very low cost. This is another factor in the economy of this method of teaching.

The projectors are so constructed that the frames on the film may be readily centered on the screen. The pictures may be changed very rapidly or very slowly. The lecturer may stop as long as desired at any illustration. In addition, he may, at any time, turn back instantly to an illustration which has been passed. (This may be accomplished with far less difficulty than is encountered when one endeavors to search through a box of slides in order to project a particular slide, or when one rewinds a whole motion picture film.)

Special Features of Strip Film Photography

A sufficient supply of pictures for a lecture of one hour's duration can easily be placed in a tiny pill box, which will fit in the lecturer's vest pocket.

The cost per picture is about two cents. This is far cheaper than charts or lantern slides, and very much cheaper than motion pictures.

The films can be stored in a very small space, the strip for each lecture being stored in a properly labelled pill box.

The films are, of course, unbreakable, but they may, after long use, become torn. To replace these, howeved, as many duplicate positive films as desired may be printed from the stored negative, at the cost of one cent per picture.

Once a strip of pictures is prepared for a particular lecture, the continuity can not be disturbed thereafter—a point much to be desired.

The entire outfit—camera, projector, title board, auxiliary lens, and screen—may be obtained for less than one hundred dollars.

Uses of Strip Film

Strip films may be used (1) for the illustration of any medical lecture; (2) for the reproduction of charts, tables and text book illustrations; or for showing (3) the various steps in operative or other tech-

nic; (4) the right and wrong ways to follow a certain procedure; (5) the changes in a series of x-ray films; (6) the method of making a phyical or other routine examination; (7) the progress of a certain disease or other pathological condition; (8) the change in the growth of animals during nutrition experiments; (9) the various steps in an anatomical dissection or post mortem examination; (10) for the photographing of interesting cases for later demonstration to students; (11) for the photographing of buildings and equipment in other institutions; and for many other purposes too numerous to mention.

The Advantages of Strip Film Photography

The advantages of strip film photography are as follows:

1. It is extremely economical.
2. The films require very little storage space.
3. The films are, of course, unbreakable.
4. Duplicates are easily made at small cost.
5. The pictures may be taken by an amateur.
6. In projecting, one may stop at any point and turn back to any picture on strip, in an instant.
7. The apparatus for taking, reproducing or projecting the pictures, as well as the film itself, is readily portable.
8. It is the best substitute for slow motion pictures.

Summary

In other words, strip films are—Easy to make. Easy to show. Easy to store. And, one might add, "easy on the pocketbook of the institution."

A Great Adventure*

WILLIAM DARRACH, M. D., Sc.D., LL.D.
Dean, Columbia University College of Physicians and Surgeons

What a dull and sorry place this world would be without the spirit of adventure. To travel a fixed and ordained path with no uncertainties or dangers, no surprises or sudden unexpected emergencies may attract the timid soul, but for most of us such a journey would be very tame and would leave us unsatisfied and hungry.

The Century Dictionary tells us that adventure means "that which comes or happens; a hazardous enterprise; a remarkable occurrence in one's personal history; a speculation of any kind; peril, or danger." Is there not an answering thrill to these words?

Adventure may be undertaken deliberately or it may suddenly come upon us when we least expect it. Do you remember those thrills of excitement you experienced in your early days when with your fellow conspirators you planned in deep secret that excursion? To escape the watchful parental eye, to collect and hoard the food necessary to sustain the band, to elude the hated higher authority, be it father, nurse, teacher, policeman, or landed proprietor, were matters of great importance and needed careful thought and serious discussion. Even if the affair was carried through quietly and successfully, even if you were attacked neither by dog, nor Indian, nor the horrible giant who lurked in the dark corner by the corncrib, the excitement and the pretended bravery you showed made it all quite worthwhile. The memories of such events are perhaps their most precious qualities, yet each such adventure adds to our equipment and our character as well as our experience. So it is that tales of adventure have such charm for boys, and as the years go on a man's appreciation of adventure is not a bad sign of his youthful attitude on life.

In olden days, the deliberate undertaking of an adventure was a less complicated affair than it is today. The knight called for his horse and armor, his sword and lance, and was off upon his quest without much ado or equipment. Admiral Byrd's preparations for his southern trip were in marked contrast. Last week a friend of mine sailed for the Belgian Congo on a quest for the Museum of Natural History. His own share of the accoutrement consisted of thirty-three metal boxes averaging fifty pounds apiece. The wise adventurer today studies his

*Commencement address delivered at Jefferson Medical College, June 6, 1930.

country, its climate, its inhabitants, man beast and insects; he learns its dangers and difficulties and diseases. He reads its history and accounts of the previous expeditions to this and similar places, and he gets himself physically fit.

You men of Jefferson are ready to embark on a great adventure. We, your elders, your families and friends are here to wish you "God-speed" on your quest. You know not what awaits you over the crest of the hill or around the corner. But you have the qualities which promise well for the success of your expedition. You have the desire to learn new things, to meet and solve new problems, to add to the common knowledge and to make the world a better place in which to live.

Your period of preparation has been long and often arduous. You have absorbed much of the experience of those who have gone before you. You have profited both by their successes and their failures.

Besides acquiring information in the sciences, basic to human life, you have trained your powers of observation. Through your eyes and ears, your fingers and noses, you are able now to pry into many of the secrets of the human machine. You have learned how to assemble this evidence in an orderly manner, to properly evaluate it and to deduce therefrom what is the actual condition giving rise to these signs and symptoms. You can now form some idea of what may happen and are prepared to meet these conditions. You have learned what may be done to prevent or preserve, to repair or mitigate these ills of mankind.

And, yet, how comparatively little have your elders been able to teach you, or you to learn, of the real causes of disease or the methods of combat. How rarely will the actual case fit entirely the textbook picture. How many and sudden are the surprises that arise and how rapidly will the picture change. How frequently will these changes become real dangers, and how tremendous are the responsibilities on your shoulders. The practice of medicine is truly a hazardous enterprise. To be ready to meet these emergencies as they arise requires all that a man can give. We must continuously increase our knowledge and broaden our judgment. We must be ready to make definite decisions and we must have the courage to act promptly and without fear. We must remain open minded as new evidence arises and so intellectually honest as to acknowledge our mistakes and profit by them.

In the battle against disease the patient's greatest asset is his own inherent tendency to resist and overcome the enemy. Our own positive efforts as physicians can be of great help in removing or weakening

the cause or in aiding the body to resist, but let us always realize that most of our therapeutic efforts are two-edged swords and have potential dangers which are often as great as are their possibilities for good. In whatever we do, our problem is to try and do as much good and as little harm as possible.

In studying the various diseases to which the human body is prone, you have learned the normal course, the usual outcome, but in your ward and clinic experience how uncommonly have you met these normal cases. You have learned to expect the unusual and it is to this unexpectedness, this uncertainty that the practice of medicine owes its adventuresome quality. Only too often are these unforeseen events truly hazards if not actual perils and dangers. We must not only be in readiness and equipped to meet these emergencies but we must cultivate such a philosophy that we may afterward learn our lesson without losing our courage. It is difficult enough to carry on when in spite of all we may do our patients do not recover. It may be a comfort at times to realize that no matter what we might have done the outcome would have been the same. The dark times will come though when our own mistakes of commission or of omission have contributed to the unhappy result.

As we honestly face the facts, we know that such perils require great courage. At such times, especially when we truly walk in the valley of the shadow of death, do we physicians feel the need of a firm faith in a Supreme Being. Like a child in the dark our hand reaches out for some unseen presence. We listen for a voice which will tell us not to be afraid. In spite of sneers and doubts I am one who believes that religion is a vital force in medicine and that the physician who has not some religious belief is truly handicapped.

There are other hazards also. There are the dangers of contagion and infection to which the physician is constantly exposed and has always taken as a matter of course and with that fearlessness of youth which is often carried to a foolhardy extreme. There is another danger which will try your soul and prove your manhood as you are powerless to prevent or avoid it. I mean the danger to your good name from the careless gossip of your patients and their friends and even your colleagues. Only too often do we hear of the caustic cruel and unjust criticism of physicians. See to it that you are not guilty of such action.

But as its hazards and perils are great, so also are its rewards. Awaiting you in this great adventure are many recompenses.

So far, I fear that most of your attention has been directed to learning the diseases to which humanity is liable. But more and more

you will realize as time goes on that your main problem will be not disease occurring in a human being, but rather an individual personality who is suffering, who is in trouble, sorrow, need, sickness or other adversity. It is the human individual of whom you must think and for whom you are responsible. You must recognize and dispel the fear which lies behind that anxious face, that dread of what may come to pass. The sense of satisfaction for you to see peace return, to see happiness restored to a disturbed household, to see men and women take up their burdens with new hope and new courage, because of your assistance, will often times be greater than your relief when the fever subsides or the pain disappears.

The feeling of trust and confidence in us which some of our patients show is one of the most stimulating influences men can experience. Often it will make us shudder at our own unworthiness. Because of this trust in us, we physicians share with the clergy and the schoolmasters that responsibility for the lives of others and the need for being worthy of that trust bars for us many of those delightful vices which the world does not take as seriously in other walks of life. The physician can never quite live up to the ideal held out for him but he has to continually try his utmost.

As old Hippocrates outlined for us more than two thousand years ago "We shall be loyal to the profession of medicine, and just and generous to its members; we shall lead our lives and practice our art in uprightness and in honor" and then "if you shall prove true to this your oath may prosperity and good repute be ever yours; the opposite should you prove yourselves foresworn."

The Experimental Method in Modern Medicine

By B. P. Babkin
McGill University Faculty of Medicine

No discussion of the importance of the biological sciences, especially physiology and biochemistry, in medical education will be found in this note, since it is obvious that these sciences form the basis of modern medicine. The most convincing exposition of this view is to be found in one of the best books ever written on medical problems, namely, Claude Bernard's "Introduction à l'étude de la Médicine Expérimentale," 1895 (translated into English in 1927). Information concerning different systems of medical education in various countries and their relative importance may be obtained from A. Flexner's valuable study, "Medical Education." (Macmillan Co., 1925).*

Introductio nof Experimental Method

The present aim is to emphasize only one of the possible ways of introducing the experimental method into the hospital wards and into medical practice. This method, of course, is used largely in university clinics and in some hospitals, but very little systematic experimental training is given to young medical men preparing for a medical or surgical career. The McGill University scheme of "experimental surgery" is an attempt in this direction.

Every medical student remembers that strange feeling, when after a successfully accomplished course in the biological sciences, including therein anatomy, physiology, biochemistry and pharmacology, he is first confronted with a patient in the hospital wards. It seems to him then that the knowledge acquired during his preclinical years has a rather limited application to the varied and complicated problems of clinical practice. He gets the impression that there must be a new way of approaching the human body that is diseased, and that a new mental attitude must be adopted. Instead of separate tissues, organs and systems and their function, he has now to deal with a whole body, in which the normal relations are distributed by pathological processes. Moreover a new factor enters the field about which he knew nothing before: by any possible means he must restore to normal the disturbed condition of the body, in other words he must "help" his patient.

*A general discussion of the experimental method from a philosophical point of view may be found in G. W. Florovski's "The foundation of logical relativism," in Scientific Memoirs of Russian Scientists in Prag, Vol. I, p. 93, Praha, 1924.

Clinical Value of Biologic Sciences

As a result of this difficult situation a doubt may arise in the mind of the young medical student concerning the real value of the biological sciences in practical medicine. There is surely no practitioner in the world who would deny the significance of the biological sciences for medicine, and who would like to return to pure empiricism. There may, however, be a great temptation to overestimate empirical experience, which still holds some ground in medicine owing to the incompleteness of our scientific knowledge. Such an attitude toward the biological sciences can greatly handicap the development of medical science. It may create that opposition to new ideas in medicine with which so many great discoveries have been confronted. Any surgeon today would consider the neglect of asepsis during an operation to be a crime. Did they all, some fifty years ago, consider criminal the neglect of the measures proposed by Lister to prevent the infection of wounds? And did not those surgeons who rejected the new ideas of Lister bring in certain cases harm to their patients? In the same way the practitioner will be of little use, or may even do harm to his patients, if he does not keep pace with the development and achievements of the biological sciences.

In his address on: "The present tendencies and methods of physiological teaching and research" (*Science,* Vol. 61, p. 295, 1925), A. V. Hill says: "Medicine has a difficult and urgent task, a task which brooks no delay. One function of physiology is to keep the seas clear and free from that task. There are quackeries enough. Today in London there are qualified medical practitioners earning a large income, exploiting the credulity of sick people, by using the childish box of tricks associated with the name of Abrams. There are many other such types of fraud. You know them just as well as we do. Without a scientific education how can a medical practitioner deduce that a potency of 50 in a homeopathic medicine represents a concentration of one molecule in about 100,000 visible universes!"

Professor O. S. Gibbs tells us *(Can. Med. Assn. J.,* Vol. 18, 565, 1926) an amazing story, of how more than ten thousand medical men prescribed for their patients, especially those with tuberculosis, impure tap-water with a smell of garlic. According to Burbidge *(Can. J. Pharmacy,* 1927) on an average 24 per cent of the medicine prescribed in Canada belong to the proprietary and patent medicine class.

Experimental Method of Approach

But the importance of the biological sciences in practical medicine goes much deeper than the mere application of scientific discoveries to

practice, or the control of false and fraudulent statements. Let us consider if there is any difference in the method of approaching a biological and a medical problem. The basis of every biological science, such as physiology, biochemistry, etc., is experiment. As Claude Bernard pointed out long ago, experimentation is a mental process and not mere manipulation. "Considered in itself the experimental method is nothing but reasoning by the help of which we methodically submit our ideas to experience—the experience of facts." (l.c., p.2).

The biologist must first of all learn how to observe new facts or a deviation from those already known. The more sharply this capacity is developed in a biologist, the more chance he has of discovering a new phenomenon or establishing relations between phenomena previously discovered. Observation, however, is only the beginning of experimentation. The next step is the construction of a hypothesis which will explain the phenomenon observed, and which can be proved or disproved by actual experiment. The construction of a suitable hypothesis is the most important and the most difficult part of the experiment. Success here depends on the knowledge previously accumulated by the experimenter, the analytical properties of his mind, and his scientific imagination.

Component Parts of Method

Thus the experimental method consists in (1) observation; (2) construction of a hypothesis; and (3) actual experimentation.

Exactly the same mental process is employed by the clinician. He observes a fact, a deviation from normal conditions; he constructs a hypothesis by which to explain the morbid phenomenon; and he proves or disproves his supposition by means of an experiment. In many cases the experiment is actually performed, as for example in cases of gall-bladder function tests, fractional analysis of gastric and duodenal contents, electrocardiography, and in certain tests employed in cases of nephritis, diabetes, and so on. In many other cases the practitioner forgets that he is performing an experiment. Thus one will hardly say that he is "experimenting" on a patient when he determines the expansion of the lungs by means of percussion, or conducts a differential diagnosis between the organic lesions of the heart valves and neurosis of the heart by auscultation in a sitting or lying position.

Medical Empiricism

The mental process in the case of medical empiricism is quite different. The pathological deviation from the normal will be noted; a hypothesis whereby to explain the morbid condition will be constructed;

but no attempt will be made to prove it experimentally. The decision concerning the case in question, especially the therapeutic measures, will be made in accordance with previous experience, acquired at first or second hand, but which was never controlled by experimentation. (In the worst case medicine may be given simply to avoid a symptom, say, pain, without any attempt to analyze the morbid condition.) As was stated above, in view of the complexity of most of the pathological states, and the incompleteness of our scientific knowledge, empiricism even in its best form can not be excluded altogether from practical medicine, but no efforts should be spared in submitting any empirical knowledge to the test of scientific analysis.

What is true about medicine is true about surgery. There is no difference whatsoever between the methods of thinking in internal medicine and in surgery. In both cases it must be experimental and physiological. The only difference is in the treatment of disease, although even in this respect medicine and surgery do not differ greatly, since both have many common methods of treatment (for example, the use of heat and light, radium, roentgen-rays, and so on). It may also be remarked that the surgeon performs an experiment not only when he makes a diagnosis, but also when he operates. In interfering with the integrity of the body, the surgeon performs his second experiment, changing the relations between different organs or influencing the chemical composition of the body fluids. Without any harm to the patient a scientific post-operative investigation would clear up many questions and make for a better understanding of the results of surgical treatment.

Experiment is Basis of Medicine

From this discussion it is clear that the basis of medicine is experiment. There is no doubt that the progress of medicine is closely related to that of the fundamental sciences, physics and chemistry, and to the biological sciences. But for the further development of medicine a most vital factor is the application of the experimental method. Therefore, the idea of experiment must be very deeply implanted in the minds of young medical men and surgeons. By keeping alive and unabated the spirit of investigation, they will not pass by the priceless material which human pathology presents in such inexhaustible variety.

Training of Investigators

How is this army of investigators to be created for the hospitals? The medical curriculum does not afford much opportunity for training in the experimental method, since medical students produce no actual

research work. There has been a suggestion *(Can. Med. Assn. J.,* Vol. 21, p. 315, 1929) to place the professors of anatomy, physiology, physics and pharmacology on the consulting staff of the hospital. It seems to the writer that this measure would be useful only if there is already the right atmosphere in the hospital. The best way to introduce the experimental method into practical medicine would probably be to train young medical graduates, especially those whose aim is an academic career in medicine or surgery, for a couple of years in the biological laboratories. By this is meant, not so much technical training in some of the biological sciences—physiology, biochemistry, pharmacology—as the acquisition of a certain mental attitude toward theoretical and practical medical problems. A "scientific" point of view on phenomena under observation, and "scientific" treatment of such, cannot be acquired from books. Only actual research work in a laboratory, and continuous and strenuous mental effort directed towards the solution of certain experimental problems will teach a young man how to deal scientifically with them.

At the present time an attempt is being made in that direction at McGill University by the creation of a scheme of "Experimental Surgery" (supported by the Rockefeller Foundation). It is very desirable, however, to extend the scheme to the other branches of medicine. Young surgeons, who have proved themselves capable in that branch of medical science, enter one of the biological laboratories (physiology, biochemistry or pharmacology) and work there for two years as research students conducting experiments, many of which involve operative porcedures on animals. They will return afterward to the University surgical clinic, where it is hoped that they will retain and foster within themselves the experimental spirit which they acquired in the laboratories.

A Survey of the Medical Schools of the United States Relative to the Teaching of Diseases Due to Allergy*

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Observations made during the past decade have led me to believe that at least 7 percent of the population of the United States sometime during their lives suffer from some form of allergy. Differing from acute infectious diseases and many other pathologic conditions to which human flesh falls heir, the allergic syndrome frequently appears in infancy or early childhood and continues to appear and reappear throughout the entire life of the individual.

The average allergic patient, in all probability, therefore, during his or her lifetime, will call on four score or more of the physicians of the United States seeking relief from symptoms due to a specific hypersensitiveness. However, unless the condition be a typical case of seasonal hay-fever or asthma, the wrong diagnosis would be made by at least 90 percent of the physicians on whom they called. Even in typical asthma and hay-fever, which would easily be diagnosed, the average physician would have little conception of the scientific methods of treatment and the possibilities of relief. The question naturally arises, therefore, as to why the appalling lack of knowledge concerning allergic diseases by the vast majority of the physicians of this country.

Lack of Teaching About Allergic Diseases

I think there are two possible answers to this question. In the first place, up until ten years ago little was known concerning diseases due to allergy. Therefore, the physicians trained in the medical schools of this country prior to that time had little opportunity of studying this subject, and since they have been out of the medical schools, few general medical programs have dissertations concerning diseases due to allergy. About the only information they obtain is from literature put out by commercial firms.

It appears from such literature that diagnosis and treatment of allergic conditions is very simple. In their attempt to simplify treatment results generally have not equalled their claims, which has made many disbelievers in specific methods of treatment of hay-fever and asthma, not only among patients but also among doctors.

*Read before the Association for the Study of Allergy, Portland, Ore., July 8, 1929.

In the second place, the data collected from the medical schools, obtained from a questionnaire sent them, would lead one to believe that the training concerning diseases due to allergy given in the average medical school in this country at present is being greatly neglected. Thus, a large percentage of the medical students who are now graduating, and even those who have had one or two years of excellent training in hospitals, have had but little taught them concerning allergy.

Data on Teaching

The following questionnaire was sent to the professors of medicine of thirty-five of the leading medical schools of the United States. A reply was obtained from many. Additional data concerning the questions asked was obtained from several members of the American Association for the Study of Allergy who are practicing in the cities in which the universities are located.

1. In the medical curriculum of your school is there a definite course for the teaching of allergy?
2. Is the course compulsory or elective?
3. How many hours are devoted to the immunological aspect of the subject? How many hours devoted to the clinical study?
4. Is the work given in the Junior or Senior year?
5. From what department are the lectures given, Medical or Immunological?
6. Name of the Doctor or Professor who lectures on the subject?
7. If there is no definite course, approximately how many hours are devoted to the teaching of allergy by one or more of the men in the Department of Medicine or the Department of Immunology?
8. In the dispensary of the school is there an Asthma and Hayfever Clinic?
9. Is there any definite research work being done by the medical school on allergic diseases?
10. Will you express your personal attitude, in brief, concerning the advisability of a special course in the medical curriculum for the study of allergy?

Courses in Allergy

In reviewing the catalogs of the medical schools relative to the curricula only two schools were found offering special courses in allergy, and in one of these schools, according to the catalog, the course was given only every other year. In answer to question 1, in only eight schools, including the University of Oklahoma, a definite number of hours (which is quite variable, however) is being given to the study of diseases due to allergy. Of these eight schools the work was reported compulsory by six, elective by two. The average number of hours devoted to didactic and clinical work by the eight schools reporting definite work given, was eight. In four of the eight schools the work

is given entirely in the Junior year and in the other four partly in the Junior year and partly in the Senior year. In four of the schools the work is given in the medical department; in the other four in the department of bacteriology or immunology. Four of the schools reported, in answer to question 9, that there was definite research work being done by the medical school on allergic diseases.

Professors from many of the medical schools reported that there were no special courses given in their schools for the study of allergy, but that the subject was taught to some extent by the professors of medicine in some cases, the professors of bacteriology in others, the professors of immunology in others, and the number of hours devoted to the subject averaged four.

Opinions as to Advisability of Course

I was very much interested in the answers to question 10, namely, "Will you express your personal attitude, in brief, concerning the advisability of a special course in the medical curriculum for the study of allergy?" In many cases the answer was given by the dean, who is professor of medicine, and some of the answers to the question were as follows.

Many reported: "I think it is very unnecessary."

Others reported: "I think it should be given by the professor of immunology."

Another report: "I believe there should be a course offered, a short course that is compulsory and another course elective for those who are interested."

Another report: "I have no hesitation in expressing the opinion that the subject of hypersensitiveness is just as important to the student of medicine as any other medical specialty. I believe that its full importance in medicine is not yet entirely known. I believe that the subject can be properly presented only by specialists in the field."

In reviewing the answers given by the various professors of medicine, it appears quite evident that in those schools where the teaching of allergy is done by a specialist in the field, the value of such teaching is appreciated. In these schools most of them reported that a special course was worth while. A large number of the professors of medicine in schools where the teaching is not done by a specialist, or not being taught at all, answered question 10 by saying that they felt that there should be no special course in allergy but that it should be given by the bacteriological, the immunological, the pediatric or the medical departments.

Who Shall Teach on Allergy?

In two or three medical schools in which very little instruction concerning diseases due to allergy is being given, there is available a specialist who is doing considerable and excellent work in allergy, and apparently the authorities of the medical school have not taken advantage of his knowledge and used him in teaching the subject. It leads one to believe that there may be something which might border on jealousy among certain members of the faculty, which for the good of medicine should be eliminated, if possible. Surely those professors of medicine who insisted that the teaching of allergy be done by the lecturers on general medicine, or the lecturers on pediatrics, or bacteriology, or immunology, do not understand the fundamental principles of allergy and they do not realize the fact that of all the courses taught in the medical schools the subject of allergy is probably the most detailed and is least understood by the surgeon, pediatrician, men in general medicine, etc. I am sure it would not appear logical to them to have one of the professors or his assistants in general medicine to teach a course in ophthalmology or a special course in skin diseases. The value of having someone especially trained to teach the courses just mentioned is not questioned. In all probability the internist could teach a course in ophthalmology much more efficiently than he could teach the students correctly concerning diseases due to allergy. It appears, therefore, that if a course in allergy is going to be taught in our medical schools, and it should be, since such a large percentage of the people of this country are afflicted with a specific hypersensitiveness, it should be done by one who is a specialist in the field.

A Suggested Course in Allergy for the Average Medical School

In the University of Oklahoma a course of eight lectures, of one hour each, taking up the fundamental principles of allergy and discussing the practical application, is given Junior medical students. These eight lectures are given by me and are a part of a 64 hour lecture course on the principles and practice of medicine. In the course on general medicine special subjects are taken up by the various specialists. For example, the lectures on tuberculosis are given by one who deals with tuberculosis as a specialty, the lectures on the diseases of the heart are given by a cardiologist, etc. During the Senior year there are several clinics of two hours each devoted to the teaching of allergy. This gives a total of from 16 to 20 hours devoted to didactic and clinical work in the study of allergic diseases, which is compulsory for every medical student.

There is an elective course in our school, offered to the Senior students, consisting of sixteen hours made up of clinical and didactic work, chiefly, however, clinical, and is offered primarily for those who are more interested in the subject of allergy than merely to obtain a knowledge of the fundamental principles. In this elective course, either private or clinical cases which have already been worked up, and many of them studied for a period of years, are used. During the sixteen hour course the student has an opportunity of seeing practically every type of allergy, and has an opportunity to study modern methods of diagnosis and treatment.

For a long time it has been my feeling, as I have watched the progress in the diagnosis and treatment of allergic diseases, and the teaching concerning diseases due to allergy, that entirely too little attention has been devoted to it in our medical schools. If, as is a conservative estimate, 6 or 7 percent of all the people in the United States suffer from some form of allergy, surely sixteen compulsory didactic and clinical hours of study in our medical schools is not too great, and for those students who are especially interested in the subject there should be offered an opportunity to study the subject more in detail. It appears that the two courses suggested would be practical for the average medical school.

Some Medical Problems Ahead*

W. C. Rappleye, M. D.
Director of Study, Commission on Medical Education

The horizon, the opportunities and the responsibilities of medicine are expanding with great rapidity and many of the traditional boundaries and divisions of medical education, public health and medical practice are undergoing significant changes. You who are now on the threshold of your life work will probably have a new group of problems to face during your professional lives. Evidence is accumulating which suggests that we may see important changes in certain phases of medical practice in the future.

This situation is not true alone of medicine but is equally true of the other professions. Engineering is reaching out beyond technical methods into the field of organization, management and finance. The law is beginning to look beyond judicial decisions and statutes to more fundamental problems of business organization, sociology and economics. Education is endeavoring to relate itself more intimately to the realities of life and to the large and complex problems of modern society. In medicine we see a growing responsibility and interest in the province of crime, delinquency and behavior, in education, social service and even in the field of industry where illness, through unemployment and lowered efficiency, is a large national problem.

The public in this country is rapidly becoming health conscious and is impatient to secure the benefits and advantages of modern knowledge regarding not only the diagnosis, treatment and prevention of disease but also the conservation of normal health, mental as well as physical. There is general agreement that physical and mental health are a nation's greatest asset. The prosperity and happiness of the people are largely dependent upon mental and physical vigor. It is quite apparent that in these problems there is need for a better coordination of technical knowledge and trained personnel and a better understanding of the features of finance and the interests of the public. This would seem to be an appropriate occasion to present several of the special features with which you will be called upon to deal in the near future. There are trends at present which indicate the general direction in which changes in medical service are moving.

*Commencement address, Cornell University Medical School, June 12, 1930.

The basic medical course which you are now completing is more closely related to these problems than many appreciate. It is not my purpose to discuss medical education as such, but it is becoming more generally appreciated that the medical student, the intern, the general practitioner, the consultant and the specialist are merely different phases in the training and functioning of personnel to meet the health needs of the community. Each of these phases are interdependent, not independent. During recent years there have been a number of forces operating in the direction of isolating medical education from other fields of education, upon which it is dependent, and from the needs of medical service, for which it is intended to prepare students. But this is merely a temporary situation and significant changes are now being made in medical education which, in the course of time, will relate that important branch of professional training more intimately and more soundly with general education on the one hand and the medical needs of the community on the other.

All true education, after all, is self-education and one of the most important functions of the basic medical training is to equip students with sound methods and habits of study which will permit them to continue their own self-education throughout their professional lives. No physician can be really successful unless he continues to be a student and this training in scientific method with its corollaries of accuracy in observation, interpretation of evidence, verification of results and judgment in conclusions is one of the most important and elementary contributions which medical education is making.

A second outstanding contribution of the basic training is familiarizing the student with the principles of the various sciences underlying our present day understanding of health and disease. These principles are likely to remain the basis of medical practice, research, teaching and public health work in the future. We are learning a great deal more about how these principles shall be learned by the students in distinction from being taught by the faculty but time will not permit a discussion of these problems.

Probably the greatest problem confronting the medical profession at the present time is that of securing a proper distribution of modern medical knowledge to the entire population at a reasonable cost. It is well recognized that our present knowledge regarding the diagnosis, treatment and prevention of disease is far in advance of its application to the needs of individuals or the community. Medical service in its larger relationships to the public has received little attention from

the profession and the universities in this country but it promises to be a real challenge in the near future. There are several features of this problem that ought to be emphasized to you.

One of the outstanding needs is to bring the professional services into more direct relationship to the medical needs. We know that between 80% and 85% of illness in this section of the world are in six groups of disorders. Since that is true, the first line of an adequate medical service should be focused upon the intelligent differentiation of these six groups of disorders and their proper care and treatment. That requires that the doctor shall be competent to make the diagnosis of those conditions, to distinguish them from others with which he may not be able to deal properly and to treat the large majority of these illnesses. Those patients needing special examinations, consultations or special treatment should be referred by the physician to laboratories, hospitals or consultants who are known to be expert and reliable in the fields in which the patient needs additional study or treatment.

It is generally recognized that not more than 15% or 20% of patients actually require the services of a specialist but all of you are aware of the fact that about 40% of recent graduates go into the specialties, usually without an adequate preparation for practice in a limited field. There are many reasons, economic, professional and public, why this is true and there are many who believe that an important cause is the failure in medical training to give to the student a proper understanding of the behavior, reactions and illness of the patient as a whole. We are too much inclined to emphasize technical and specialized procedures in the diagnosis and treatment of physical disease of isolated organs or systems alone.

It would seem only reasonable that efforts should be made to relate the professional services to the actual needs of individuals and the community if we are to secure an effective use of our professional personnel. There is every reason to believe that we shall some day require that every physician who desires to limit his practice to a specialty shall have a special training and a specific designation which will indicate to the public and the profession as well that the physician calling himself a specialist is in fact competent in the field to which he intends to limit his work. This has already been accomplished in Denmark, Norway and in the Canadian province of Alberta. It is already recognized in the hospital staffs in many places in this country, but it is believed that a more formal designation will be needed, possibly through a special licensure.

Not only is it necessary to relate the efforts of the medical personnel to the actual needs but there is also a large problem of making effective use of an increasing body of non-medical personnel, particularly nurses, dentists, midwives, physiotherapists, dieticians, social workers and a variety of laboratory X-ray and technical workers which has grown up in recent years, as indicated by the enormous development of clinics, diagnostic laboratories, visiting nurse and public health nursing activities, school and industrial medical and nursing services and similar efforts.

If an organization of the medical profession and its aides is to function satisfactorily, it is quite apparent that physicians, whether in general practice, consulting work or in the specialties, must be kept abreast of new knowledge and new methods of diagnosis, treatment and prevention. This points directly to the second large feature of a competent medical service, namely, the continuation and postgraduate education of physicians. It is likely that this feature of medical service will become the most important in the next few years and you should outline your own work for the future in such a way as to include continuation education and to participate in this vital feature of professional life. It is very necessary that ways and means be devised to keep practitioners informed about the value, limitations, indications and use of new knowledge and the methods that are based upon that knowledge if patients and the public are to receive proper diagnosis, treatment and advice regarding the prevention of disease and disability. This is going to be difficult because there are many social, economic and educational features involved which time will not permit us to discuss today. But I should like very much to leave with you an appreciation of the great importance of this phase of medicine about which we have heard very little until recently. There is a general misunderstanding about this feature of medical service on the part of the public and of many who desire to organize medical services, for they have an idea that knowledge is distributable in packages like other commodities. It is safe and valuable, however, only in the hands of those who are trained to use it.

We know that a large proportion of illness in this country at present is preventable. It can be demonstrated with little difficulty that the economic loss in this country each year because of preventable disease, disability and premature death reaches staggering figures. One of the largest opportunities before the medical profession is to devise ways and means of preventing some of this enormous economic loss, as well as some of the misery, anxiety and unhappiness which illness

brings so often, through the intelligent use of even our present knowledge, meager as it is in regard to certain killing and crippling disorders. We must do all we can to shift the vested interest of the medical profession from ill health to good health. The physician must become a health adviser and trainer as well as healer. I have no doubt that this phase of medical service has been forcibly emphasized to you through child welfare work, prenatal clinics, periodic medical examinations and the other efforts that are being made to teach students and physicians the fundamentals of prevention.

The economic aspects of medical service are receiving a great deal of publicity and are being studied in many sections of the country. These features have attracted most public attention because they are more understandable to the laity. There are indications that we are seeing a gradual readjustment of the economic factors involved in medical care. All of you are familiar with the rapid development of hospitals, clinics, various forms of community nursing, group practice, industrial, salaried and contract medical practice, the growth of tax supported endeavors through the organized health departments and a great variety of similar activities.

One of the striking economic features of medical service which will impress itself upon those of you who go into practice later is the great unevenness of illness. We have considerable data dealing with the total costs of medical care and the average expenditures each year per family but they do not give us a correct picture of the situation owing to the fact that illness and incapacity are so uneven in their distribution and the fact that they are usually associated with temporary and not infrequently with permanent loss of income. It is possible, however, to predict with reasonable accuracy the probable amounts of illness and incapacity in a given unit of the population. It is this possibility that has formed the basis of various plans and suggestions for distributing the economic risk involved in sickness and disability. This, of course, is the well recognized principle of insurance and I have very little hesitancy in believing that a discussion of ways and means of distributing the economic features of illness over large groups of the population is going to be an increasingly important problem before the medical profession.

We already see in this country a considerable development of industrial medicine and various other devices that are either insurance or closely resemble it. Possibly most of you do not realize that twenty-three of the leading countries of the world have already adopted national

compulsory insurance. Denmark, for example, has chosen to use a so-called elective or voluntary insurance plan but the actual working of the scheme in that country is really indirect compulsion. Every man running for public office in the province of Saskatchewan next fall is already pledged to state medicine. Twenty-six towns in that province have adopted a program of salaried medical services.

I mention this problem without discussing the merits, the difficulties and the defects of various forms of insurance but merely to bring to your attention the fact that we are likely to have discussion of the economics of medical service pressing upon us with increasing insistence during the next few years. All of these plans have significant and, in some instances, unhappy implications for the doctor. Moreover, it does not follow for one moment that national insurance, either on a compulsory or voluntary basis, is the only method of dealing with the problem. It is well to have in mind also that the origin, purposes and functioning of national insurance have been primarily political, not medical in character. But health problems, touching every individual in the community as they do, have enormous political significance when once capitalized by shrewd politicians. This is all the more reason why the medical profession should pay more attention to these public questions than they have in the past. The growth of industrial medicine and discussion of the possibility of some forms of sickness insurance require that all of those interested in medical care shall keep clearly in mind that the most important factor in a sound medical service is the quality of medical care, not the scheme of organization or the method of financing. The quality, interpretation and correlation of scientific knowledge depend upon trained personnel who know the significance of that knowledge and how to use it. Any sound plan of medical service devised for the benefit of the public must recognize the essential features which these requirements imply.

There are two outstanding trends of our age, the democratic and the scientific. The hope for democracy depends upon leadership. We look for such leadership in law, education, business and banking, and there is no reason why the public should not expect it of medicine. We possess the knowledge and personnel to solve a large national problem and possessing that knowledge we are responsible for working out a satisfactory solution. Medicine has an exceedingly important contribution to make to the confederated endeavor known as civilization. We shall occupy our place in modern society only to the extent that we provide leadership in health matters and in the program of

medical services which we can only bring about through sound programs of medical education, proper organization of the profession itself, sound schemes of medical and postgraduate education which will keep all doctors abreast of developing knowledge and by constructive, courageous public policy.

You are now completing the preparation which has given you some understanding of the purposes, the spirit, the art and the methods of scientific medicine. Yours is a great opportunity as you face the responsibilities of medicine in the new social order. It is you who will carry on the fine traditions and noble heritage of medicine which has given to it a continuity through the centuries of the past and a present solidarity of interest and understanding the world over which is not known in any other field of endeavor. Yours is indeed a great opportunity for public service and constructive leadership which will extend the usefulness of our profession and make it an even more indispensable element in modern society.

Language Culture in the Teaching of Medicine

GEORGE DE TARNOWSKY
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There was a time in this country, when, in the average community, the doctor, lawyer and preacher formed the triad of intellectual giants to whom the rank and file of citizenry naturally turned for information, advice or guidance. With the advent of universal education the doctor, especially, lost this dominant position.

A study of the evolution of medicine in America forces one to recognize three fairly well defined stages.

The pioneer physician in America was a cultured gentleman who, having become a proficient latin scholar, betook himself to some European medical center for his further education. Coming back home, these gentlemen kept up the traditions of the Edinburgh, Paris and other schools.

The second stage may be spoken of as the commercial era of American medicine. Medical schools multiplied like mushrooms; anybody could enter, almost anybody could graduate. Freshmen deficient in Latin were given a three months cramming in connection with their basic medical studies.

The third or present era is that which is witnessing the marvelous improvement in type of student and methods of teaching. We should strive to regain our traditional status of intellectual superiority by progressively raising our cultural level.

A knowledge of at least one foreign language must necessarily broaden our horizon, increase our understanding of the humanities and keep us in closer touch with medical progress. It is difficult to state which of the European continental languages is at present the most useful. The World War enabled French and Italian medical publications to challenge the hitherto undisputed Teutonic supremacy; a reading knowledge of either of the three principal languages of continental Europe is always a decided advantage.

We should also, in our teaching hours as well as in every day intercourse, use correct English; it is painful to hear a medical teacher speak of the "stummick" or "Bronchial tubes"! One may be certain that, in the days of Benjamin Rush, nobody would have dared use the word "Doc"; we are at present "Docs" to the public—a bad sign; familiarity never has bred respect.

Let us all, by our conduct, general culture and proper use of the English language, endeavor to re-elevate our calling to that of a noble profession!

The Educational Role of the Modern Hospital

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A few years ago the trustees and alumni of that great Canadian University decided to raise funds—several millions of dollars—for a "bigger and better McGill." Money was needed for buildings, and salaries and general endowment. Each loyal son contributed his bit—some in cash; others in that far more precious commodity—personal interest. Among the latter group was Stephen Leacock, professor of economics.

Leacock's University

From his facile pen there flowed an essay on how he would develop a university. He would begin by building a smoking room and equipping it with most carefully selected chairs. These should be comfortable enough to attract young men but not so soft as to invite sleep.

Believing that all youth is imbued with the "satiable curiosity" of Kipling's Elephant Child and that there is some degree of argumentative force in most all red blooded youngsters, he would turn his students loose to discuss life in its theory and practice—for what, pray, is of more vital interest to any one? In the course of these discussions there would probably arise a challenge or two as to stated facts. In order that those mooted points might be settled, Leacock would provide a library and a laboratory building. There the experience of past ages could be called on; or the hope of future ages developed.

As man needs to have sustenance and rest and recreation, it might be well to provide a Commons, some dormitories and an athletic field.

He then deftly inserted into his scheme a few carefully chosen mature students—men versed in the lore of the past, at home amongst the bookstacks or the test tubes, to act as intellectual traffic-cops—keeping the main lines of thought onto proper highways and shunting the venturesome beings onto interesting lanes and detours.

The Modern Hospital

Here we have Leacock's University before us. Now just as a lantern slide projector changes images on the screen by merging one into its successor, let us throw a modern hospital on to our mental screen and we shall discover that it almost exactly super-imposes his

university. We have our staff room as its pedagogic soul—with the record room and library on one hand and the outpatient department and wards and laboratories on the other.

We have one important difference, however, and that cannot be stressed too strongly. There is an even less clearly defined separation between the so-called student and the so-called faculty. The well run hospital has as undergraduates, or as interns, or as dispensary assistants, young students of medicine, who are able to give as well as receive knowledge, and whose junior and senior attendings are men who have the same mental attributes but who have merely passed further along the way. The whole staff thus fits into the trend of medical education so well expressed last February by Rappleye in Chicago:

> "The aim is to develop minds capable of finding and appraising evidence and drawing conclusions based on sound reasoning which will provide a permanent intellectual equipment, resourcefulness and sound habits as well as methods of study that will permit the student to continue his own self-education throughout his entire professional life, a continuing education which has already been emphasized as the most important factor in providing an adequate medical service for the community."

At what point in the individual physician's development can the hospital exert its greatest influence educationally? Primarily on the intern, with a distinct extension up the staff (to the dispensary assistant and younger attendings), and if connected with a medical college, down to the senior or junior undergraduates.

Routine and Education

Most Hotel des Invalides permit their duty to the patient to so mask their educational responsibilities that they run their interns ragged in their desire to get work out of them. Their house staff is far too small—for it costs money to house an intern and at least a few cents a day to feed him—and the routine work piled on to his young shoulders is so great that it crushes him. There is apt to be too little time for staff room discussion; or for meditation and reflection, which, by the way, are the only methods by which knowledge may flower into wisdom.

True it is, that in most hospitals the intern sees a multitude of cases and through sheer repetition of cardinal points he acquires a certain familiarity with disease, which is of inestimable value to him; but let us turn for a moment to see how his opportunities can be put to greater use—remembering that what applies to the intern is also of value to the undergraduate senior and to the young hospital assistant.

Duties of Intern

As we have commenced our discussion with the most important person to be educated, the intern, let us put him in the most important and neglected place in the hospital's educational field—the outpatient department. Here he should have regular duties on regular days throughout a greater part of his service.

A dispensary is a most interesting place. It resembles a stamp album. Early in a collector's career, it becomes filled with specimens in great numbers and is praised in like fashion. Later on, as the philatelist acquires judgment, its pages become peppered with fewer and rarer issues and, later still, it is discovered that with more detailed study, many so-thought common stamps have watermarks, or other distinguishing symbols, which indicate hidden value and need replacing. So the younger and more immaturely run outpatient departments are flooded with countless "cases" mostly "cheap stuff," hastily identified and recorded, and that department is outworn and discarded by the intern, or senior students or assistants, as was the stamp album of his youth.

The introduction of more time for each patient and a larger staff tend to correct this evil and medical curiosities come to light so that the work takes on new meaning and service.

Staff Room Conferences

This is not all that is necessary, however, for unless the staff room conferences are introduced, it still fails to reach its optimum. These discussions should be led by the senior attendings. Each chief should have his day. Before him should pass the few most troublesome cases of the day or week, presented by the medical student or intern or assistant, who is responsible for the progress of the case. Opportunity should be given for further discussion and examination by all and what is of greatest importance, it should be followed up by subsequent report.

In this way only can there be derived the greatest good not only to the neophyte in medicine, but to the patient himself. Collateral reading, special laboratory procedures and consultations should be resorted to when necessary, and at this point may I be so bold as to suggest that the patient's mentor, insofar as is possible, escort the bewildered sick man to the consultant's clinic and learn at first hand that individual's opinion and his reasons for it. Better yet, bring the specialist, be he of a clinical or laboratory department, into the staff meeting. By so doing, it fits into our original picture of Leacock's University.

Ward Work

Exactly the same situation exists on the wards. The intern must have time enough to digest his cases. It is poor pedagogic dietetics to

force on him at one time a mess composed of diabetics, leukemics and lateral sclerotics. Mental nutrition goes into reverse at such a diet to the detriment of the individual and his surroundings. It takes time for rich food to be assimilated and it is at this point that the older student, the attending, can help. His advice drawn from past experience, checked up by study in the record room or laboratory, either in actual work or in conversation with those trained in such thinking, gives to the intern not only knowledge but a method of attack that is essential to his high calling.

Duties of Chief of Staff

Granted that all knowledge is self-knowledge, the chiefs of staff as teachers can only educate by seeing that the younger men do their own educating. This can be accomplished by grand rounds and conferences at which the youngsters play a major part. A few cases should be presented, not too many, or the rounds will deserve the old epithet of "shifting dullness," and the presentation should be made only by the man to whom the case is assigned. He should be held responsible for as much detail as his state of learning permits. By this I mean that an undergraduate on the wards should not be subjected to the same type of questioning as the resident physician. He should be not only permitted, but encouraged, to disagree with a senior attending, but his reasons must be elicited in just the same spirit as if the intern were seeking information from his chief. Each has a right to challenge the other.

It is at this point that the small-minded attending is apt to become bombastic and try to frighten off the youthful interrogator by shouting at him, or by resorting to shyster cross examination tactics, or to a blast of shriveling sarcasm. Such a man is not worthy of an appointment to the staff of any hospital; and let us hope that the good Hippocrates will soon exterminate his species.

Teaching Value of Necropsies

The postmortem room ought to be the scene of long and careful and friendly discussions. Too often are laboratory men, steeped in the more exact branches of science, intolerant of the clinical student who cannot measure his diagnosis by a slide rule, or his prognosis by a few drops of phenophthalien. Here in their citadel they must have the gracious patience of "mine host" and help in the education not only of their juniors but of the senior members of the staff. Again it must be stressed that all are students seeking to answer that great mystery —life.

Consultations

There is one phase of hospital education which frequently passes unrecognized. This is the consultation. Too often it degenerates into a mere "make out a blue slip for the nose and throat department," and one day or two days, or a week later, as the case may be, the slip returns with the laconic statement "acute pharyngitis. Advise a throat culture." So the laboratory man is called and does what he is told and after a few more days the report comes back "streptococcus so-and-so and staphylococcus something else." Meanwhile the patient has gone home. All the slips have to be put into the basket to be sent to the record room, where some weary soul hunts up the history and pastes on the proper sheet a lot of very pretty, but meaningless, slips.

What a waste of time, and, worse, what a waste of educational opportunity. How much better could that be if the intern in charge of the patient had not only been present at the consultation, but had presented the case in person, been convinced of the necessity for taking the culture, done it himself and recorded it all as part of what was wrong with that unfortunate individual. Incidentally, this suggested method not only aids the intern but keeps alive in all attendings the spirit of perpetual self-education. It is a miniature "staff room."

Interns and Undergraduates

At this point may I indicate the difference between the pedagogic approach to an intern and to an undergraduate student. The intern on "specialty" services needs to be trained in the finer points of those intricate branches of thinking and technique. Or as a junior on surgery, he must be shown just how to scrub up and to pass hemostats, so as to assist his chief. Or he learns the advantages of specific procedure—why for instance, it is easier to pull the cocoanut out of a frier by the supra-pubic route rather than via the perineum.

These details should not be considered when talking with an undergraduate. Medicine, not urology, should be taught to him. The first consideration should be for the patient as a whole, spelt with a "w", for, after all, it is the man that is ill, more or less irrespective of the location of the pathology. Diagnosis, at first general, and as he progresses in his studies, increasingly detailed, should be stressed.

The main principles of therapeusis be they drug or surgical, are all the younger man need know. To ground him in the manual of arms, to show him the method of attack, and to demonstrate to him the limitations of his knowledge is all that the college can do.

Investigation

There is one more turn to the educational role of the modern hospital—the spirit of investigation. In the center of each institution there should be a few men of detached, scientific type of mind. To them should be offered opportunity "to track to their lairs the causes of disease." Laboratory facilities must be granted by the trustees and ward cooperation must be given by their clinical colleagues. Their enthusiasm too must not be killed by an over-abundance of routine matters, for then the institution as well as the man suffers. A spark from their anvils may kindle the fire in the heart of an intern and the results of their labors may forge a link in the ever-growing chain of public education—also a duty of the hospital. Their spirit often is the dominant one which drives men on to clinical investigation, for rarely does good clinical work come out from the walls of a hospital which does not shelter a laboratory worthy of the name.

In closing, let me reiterate the statement that the hospital's function is not limited to the care of the sick and injured; for it also has a duty to encourage all on its staff to participate in self-education in each of its departments. This self-education is stimulated by the "staff room method" and is best fostered by the example and not the exhortation of the chiefs. A department director who is not himself a student does irreparable harm to all about him. The late President Hyde of Bowdoin said, "The chief job of a college president is the selection of his faculty," —so should the trustees of our great hospitals view their responsibilities.

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DR. FRED C. ZAPFFE, Editor, 25 East Washington Street, Chicago

The Denver Meeting

The call for the Denver meeting has been issued. The meeting will be held on October 14, 15 and 16 (Tuesday, Wednesday and Thursday). The meeting place is the School of Medicine of the University of Colorado, 4200 East Ninth Street. The headquarters is the Brown Palace Hotel. Busses provided by the University will convey the delegates from the hotel to the place of meeting every morning.

Sessions will begin promptly at 9:30 a. m. Luncheon will be served by the University immediately after the closing of each session. There will not be any afternoon sessions. On the afternoon of the second day, the University will give the delegates and their friends a mountain trip in special busses owned by the University. The evening of that day is free so that there will not be any occasion to hurry back.

Everybody interested in medical education and teaching is cordially invited to come to the meeting and to participate in the discussions.

Arrangements have been made with the Burlington Railroad to provide special coaches for the trip from Chicago to Denver, thus making it possible for all those who must go to Denver through Chicago to travel together. These coaches will leave Chicago Sunday morning, October 12, and will arrive in Denver Monday afternoon. Those making reservations for this train can pick up transportation and Pullman tickets on the train if the railroad company has been notified previously. Details will be furnished by the Burlington.

Politics vs. Education

Various publications have reported the wholesale dismissal of members of the faculties of the University of Mississippi and of the A and M College. Included were two of the professors of the medical school. No reason was given for this action and neither had any notice been served those concerned. The authorities announced that the action of the board of trustees was not an unusual one inasmuch as all members of the faculty and the administrative officers are appointed for a term of one year only. Hence, failure "to reappoint" was the only answer.

Underneath it all, however, there seems to lie the conviction that politics "had taken its toll;" that not in a single instance was education considered. That, if true, is most unfortunate because agreement is general that politics and education cannot be hitched together in a team. The farther apart they remain, the better for education. If teachers must be harassed continually by the nightmare of a "Failure to reappoint," they can not be expected to give their best to the institution. And no institution can make the progress which should be made if its influence for good is to be state wide. The work done by the teacher, alone, should be the basis for reappointment, and not change in political administrations.

College News

University of California Medical School

Promotions: Jacob C. Geiger, to professor of epidemiology; Charles L. Connor, to professor of pathology; Esther Rosencrantz, to associate professor of medicine; Francis S. Smyth and Alfred H. Washburn, to associate professors of pediatrics; Max S. Marshall, Ph.D., to associate professor of bacteriology; Fred H. Kruse to associate clinical professor of medicine; Edwin I. Bartlett to associate clinical professor of surgery and pathology; John H. Woolsey and George K. Rhodes, to associate clinical professors of surgery; Lionel P. Player, to associate clinical professor of urology; Elizabeth A. Davis, Raleigh W. Burlingame, Lewis S. Mace and Harry C. Shepardson, to assistant clinical professors of medicine; Robert C. Martin to assistant clinical professor of laryngology, otology and rhinology; Edward C. Bull, to assistant clinical professor of orthopedic surgery; Merry Myrl Morris, Lloyd E. Hardgrave and Kunisada Kiyasu, to assistant clinical professors of pediatrics.

Appointments: Le Roy Crummer, clinical professor of medical history and bibliography; Harry G. Bell, associate professor of surgery; Sanford V. Larkey, assistant professor of medical history and bibliography; Raymond J. Reitzel, assistant professor of medicine; Harold F. Blum, assistant professor of physiology; Conrad Jacobson, assistant clinical professor of surgery; David A. Taylor, assistant clinical professor of obstetrics and gynecology.

Resignations: Stephen Poljak, assistant professor of neuro-anatomy; Milton I. Rose, assistant professor of physiology; James L. Whitney, assistant clinical professor of medicine.

Changes in Title: Herbert M. Evans to Herzstein professor of biology; William P. Lucas to clinical professor of pediatrics; Charles E. Nixon to lecturer in neuropathology.

The J. J. and Nettie Mack Memorial Foundation for the study of cancer and of surgical diseases of the chest was dedicated June 9. The foundation was made possible by a gift of $105,000 from Mr. and Mrs. George Roos, and is a memorial to the parents of Mrs. Roos. Space in the University Hospital has been provided for the establishment of a clinic for the foundation. Already the attendance of patients at the chest clinic has been large.

Temple University School of Medicine

Appointments: Alfred E. Livingston, professor of pharmacology; Matthew Ersner, professor of otology; N. W. Winkelman, professor of neurology; Chevalier Jackson, professor of bronchoscopy; Temple Fay, professor of neurosurgery; Wm. C. Pritchard, professor of histology; Thos. Klein, professor of applied therapeutics; Victor Robinson, professor of history of medicine; W. Edward Chamberlain, professor of roentgenology and radiology.

A Philadelphian has given $25,000 to be used for equipment of one floor of the medical and surgical dispensaries. The new building, which will cost approximately $1,000,000, will be ready for occupancy in October.

Hahnemann Medical College and Hospital

An absolute bequest of $100,000 and contingent provisions which may make

the total gift almost twice that amount are made in the will of Miss Fanny Augusta Shortridge, who died April 19. The residuary estate, the value of which is unknown, is also willed to the hospital. The will directed that the outright legacy was to be used for erecting a dispensary to be known as "The John Henry Shortridge Memorial Building," in memory of her father. But the will was made in 1916, and foreseeing the possibility of the hospital's growth, the testatrix added that "if a dispensary building adequate for the needs and purposes of the said hospital shall have been erected prior to my death, I direct the said sum to be used as an endowment for the building."

Jefferson Medical College

Appointments: Dr. Thomas C. Stellwagen, professor of genito-urinary surgery, to fill the vacancy caused by the death of Hiram R. Loux; J. Clarence Keeler, professor of otology, to fill the vacancy caused by the death of S. McCuen Smith; and Louis H. Clerf, professor of bronchoscopy and esophagoscopy, to fill the vacancy caused by the resignation of Chevalier Jackson.

Washington University School of Medicine

Appointments in the department of ophthalmology: George H. Bishop, now associate professor of pyhsiology in the school of medicine, professor of applied physiology; Louis A. Julianelle, of the Rockefeller Institute for Medical Research, associate professor of applied bacteriology and immunology; James A. Hawkins, also of the Rockefeller Institute, associate professor of applied biochemistry; R. Wendell Harrison, of the University of Chicago, instructor in applied bacteriology and immunology; and Garvey Bowers, of the University of Kansas, research assistant in applied bacteriology. Harvey J. Howard is head of the department of opthalmology.

Johns Hopkins University Medical School

Faculty changes: Marion Hines, Ph.D., from associate in anatomy to associate professor of anatomy.

L. Emmett Holt, Jr., from associate in pediatrics to associate professor of pediatrics.

Woman's Medical College of Philadelphia

The college has recently received the following subscriptions to the building fund: $1,000 from Mrs. James Starr, president of the college; $1,000 from Mrs. George Horace Lorimer, on behalf of the Republican Women of Pennsylvania; $1,000 from Dr. A. A. Mitten; and $1,000 from E. T. Stotesbury. Mrs. Lucretia Blankenburg, at a dinner given in her honor by the college, presented the school with a $100 "pot of gold" she recently received as the first "Fame Award" of the Philadelphia Club of Advertising Women.

A $100,000 campaign has been launched to purchase equipment for the new building. The cornerstone of the proposed building at Henry Avenue and Abbottsford Road was laid on June 11, commencement day.

Temple University School of Medicine

Thomas Klein, professor of therapeutics has been appointed professor of clinical medicine; and Allen G. Beckley was appointed clinical professor of medicine.

Long Island College of Medicine

The announced separation of the Long Island College Hospital from its Medical School, calls for the organization of a new medical college to be associated

with nine Brooklyn hospitals. The physical equipment of the combined units will cost more than $100,000,000. The new institution, for which a board of trustees has been chosen, has been granted a charter as a medical college. The board has already voted the first $500,000 toward an endowment fund to meet the educational law requirements for the organization of a collegiate institution in New York State.

The plans for the new college include the erection of a central building which will be located in mid-Brooklyn and be easily accessible to the hospitals involved in the plan. The site has already been secured. The building which is to be erected within the next five years will cost more than $3,000,000. When completed, the central plant and its affiliated hospitals will take care of at least 400 medical students. Courses in the first two years will be given at the central building. In the last two years students will receive instruction at the central plant and at the affiliated hospitals. These arrangements will make more than 4,600 hospital beds available for teaching purposes. These figures do not include the plans for the future expansion of the hospitals. At each hospital where there is a teaching unit, members of the staff will serve on the medical school faculty for instructing students. This will mean the enlargement of the present faculty, most of whom will be retained, according to the officials of the old college.

The formation of the new board is the result of planning which began two years ago. At that time a group of prominent Brooklyn citizens decided to see what could be done to further medical education in Brooklyn and how the clinical facilities of the borough could best be used for teaching. At that time also the authorities at the Long Island College Hospital had been considering expanding their institution. For a time the two groups surveyed the field separately and discussed the situation informally with each other. In December, 1929, the board of regents of the Long Island College Hospital appointed a survey committee including representatives of the board of regents, the faculty of the medical school, the Alumni Association of the Medical School, and members of the special committee. This committee worked out the plan which is now under way. At a meeting of the board of regents of the Long Island College Hospital, held April 22, a resolution was adopted to sever relationship with the medical school and give up the charter. Immediately a board of trustees for a new medical college was authorized and formal plans for incorporation were made.

The severance of the Long Island College Hospital and its medical school ends a relationship which at its beginning in 1858 marked a pioneering attempt in the United States at uniting a hospital and a medical school.

University of Chicago

Anonymous gifts have been received amounting to about $2,000,000 to build new laboratories for the departments of bacteriology and anatomy. It is said that one-half of this sum was contributed by the General Education Board.

Appointments: Franz Alexander, University of Berlin, visiting professor of medicine for one year; Bengt Hamilton, professor of pediatrics; N. Paul Hudson, professor of hygiene and bacteriology; William W. Swanson, associate professor pediatrics; Aaron Arkin, assistant clinical professor medicine; Clay G. Huff, assistant professor of hygiene and bacterioloy; Rudolph Schoenheimer, of the Pathologic Institute, Frieburg, Germany, assistant professor in surgery; Ruth Herrick, instructor in medicine; Hilger P. Jenkins, instructor and resident surgeon in surgery; E. S. Guzman Barron, research associate in medicine.

Promotions: Louis Leiter, Charles P. Miller, Jr., and Walter L. Palmer, to associate professors of medicine; Edward Buckman, to assistant clinical professor of surgery (genito-urinary); Michael Higgins Ebert, to assistant clinical professor of dermatology; Paul Christopher Fox to an assistant clinical professor of obstetrics and gynecology; George Henry Jackson, Jr., to assistant clinical professor of surgery; Edwin McGinnis, to assistant clinical professor of larnygology and otology.

Mr. Max Epstein has subscribed $50,000 through the University of Chicago to the Provident Hospital and Training School for the purpose of naming the lecture department to be known as the Max Epstein Clinic of the Provident Hospital. Dr. Joseph B. DeLee has pledged $10,000 for the purpose of naming the lecture room of the department of gynecology and obstetrics at the Lying-In Hospital in memory of his mother, Dora DeLee. Dr. Edward J. Ban Liere, Morgantown, W. Va., endowed a research fellowship in memory of his deceased wife to be awarded to a student of medical science in the department of physiology recommended by Dr. Anton J. Carlson. The Julius Rosenwald Fund has awarded a fellowship of $3,000 to Dr. Franz Alexander of Berlin to enable him to serve as visiting professor of abnormal psychology or psychiatry in the department of medicine. The medical library fund has been given $2,683.50 for the purchase of the Ahlfeld library in gynecology and obstetrics. For research the following grants have been received: $1,200 from the Anasarcin Chemical Company, Winchester, Tenn., for a fellowship in the department of pharmacology for study of squill compounds; $5,000 from the Glycerin Producers' Association for glycerin research under the direction of Dr. Carlson; $1,000 from the General Electric X-Ray Corporation for research in diathermy in the department of physiology, and $9,400 from the National Research Council for studies in the physiologic chemistry of sex hormones under the direction of Fred C. Koch, Ph.D., of the department of physiologic chemistry.

University of Michigan Medical School

At a recent meeting of the board of regents, the appointment of a new executive committee to govern the school was approved. The directorship of the division of preclinical medicine will go to Frederick G. Novy, head of the bacteriology department and a member of the old executive committee. Graduate medicine will be under the supervision of James D. Bruce, present supervisor of the work. Clinical medicine will be directed by Udo J. Wile of the dermatology and syphilology department. Harley A. Haynes will have complete direction of the University Hospital, and Arthur C. Curtis, former assistant to the dean of the medical school, now becomes secretary. The new arrangement will cancel the system which has been in use since February.

Graduate courses in pediatrics, roentgenology and serology will be presented at the University Hospital, Ann Arbor, during October, November, December, February, March and April under the auspices of the Michigan State Medical Society and the graduate department of the University of Michigan. Further information may be secured from the director of postgraduate medicine, University Hospital, Ann Arbor.

It is reported that an increase of $5 in the tuition of all schools and colleges of the University of Michigan has been made on account of the rising cost in the administration of the health service. Beginning with the fall semester, the total of $15 will be set aside from each student's fees to meet health service costs.

Western Reserve University School of Medicine

Promotions: Abram B. Bruner, associate clinical professor of ophthalmology for five years; John A. S. Gammel and John E. Rauschkolb, assistant clinical professor of dermatology for three years; Walter B. Rogers, assistant clinical professor of surgery for three years; Marion D. Douglass, Jr., assistant professor of gynecology for three years; Norman C. Wetzel, assistant professor of pediatrics for three years.

Medical College of Virginia

Faculty changes: Isaac A. Bigger, professor of surgery; Goldsborough F. MacGinnes, Harry G. Grant and Allan L. McLean, associates in preventive medicine; Blake W. Meador, associate in dermatology and syphilology; James Asa Shield, associate in nervous and mental diseases.

Promotions: Joseph Bear, assistant professor of obstetrics; James G. Lyerly, professor of oral surgery; Robert S. Preston, assistant professor of medicine; Harry B. Sanford, associate in obstetrics; Clifford W. Skinner, associate professor of anatomy; Daniel D. Talley, Jr., associate professor of roentgenology; John P. Williams, associate in medicine.

George E. Vincent, Ph.D., was the speaker at the ninety-second commencement exercises of the medical college; this year there were 95 graduates in medicine. Joseph Lyon Miller, Thomas, W. Va., was awarded the honorary degree of doctor of letters by the medical college. The school has received a grant of $120,000, $40,000 from the Julius Rosenwald Fund and $80,000 from the General Education Board, for the construction of a dormitory and educational unit for the school of nursing of the St. Philip Hospital; this is an institution for Negroes, owned by the college.

University of Kansas School of Medicine

This school is planning on sending some junior students to work with active practitioners of the state. The physician to whom a student is sent is expected to furnish him at least with his board and room in return for what assistance he gives. Any active practitioner who is interested in securing a student is requested to communicate with the dean of the University of Kansas School of Medicine, Kansas City, Kan. The plan is similar to the one adopted by the University of Wisconsin.

University of Tennessee College of Medicine

In July the school inaugurated the requirement that each student admitted be subject to a physical examination annually. Admission is denied to those having defects until such disability is removed. In the annual reexaminations, students will be required to withdraw if their physical condition is unsatisfactory but allowed to reenter on the removal of the disability.

Medical College of the State of South Carolina

Faculty appointments: Olin B. Chamberlain, assistant professor of medicine; Robert B. Gantt, assistant professor of urology; Josiah E. Smith, assistant professor of rhinology and otolaryngology; Francis W. Porro, lecturer in pharmacology; Pierre G. Jenkins, lecturer in ophthalmology; Powell M. Temples, lecturer in clinical pathology; Eugene C. Hood, lecturer in bacteriology; Thomas H. Byrnes, instructor in pathology; Paul W. Sanders, instructor in urology; John M. van de Erve, instructor in physiology; Robert B. Rhett, instructor in ophthalmology; Robert M. Hope, instructor in rhinology and otolaryngology; James D. Whaley, assistant in urology; John Sug-

rue, assistant in obstetrics; William H. S. Speissegger, assistant in medicine; Isaac R. Wilson, Jr., assistant in surgery; James P. Paumer, assistant in roentgenology; George H. Zerbst, assistant in rhinology and laryngology; G. G. Durst, assistant in chemistry to fill the position made vacant temporarily by the leave of absence granted by Frederick W. Kinard; Charles W. Kollock was appointed professor emeritus of rhinogology and laryngology, following his resignation.

Vanderbilt University School of Medicine

Resignations: Francis H. Swett, to become professor of anatomy in Duke University; Duncan C. Hetherington, to become assistant professor of anatomy in the Medical School of Duke University.

Appointments: Karl E. Mason, associate professor of anatomy; Sam L. Clark, assistant professor of anatomy; Frank H. Luton, assistant professor of psychiatry, effective January 1; Harry Hillstrom, assistant professor of surgery in charge of roentgenology, succeeding Dr. Christopher C. McClure, resigned; Richard Ashman, assistant professor of physiology; Ann S. Minot, assistant professor of pediatric research; John B. Youmans, associate professor of medicine, was appointed also director of graduate instruction.

Promotions: Alfred Blalock, associate professor of surgery; George S. Johnson, assistant professor of surgery; Alvin E. Keller, assistant professor of preventive medicine and public health; Howard W. Robinson, assistant professor of biochemistry; C. Eugene Woodruff, assistant professor of pathology.

University of Pennsylvania

Ceremonies celebrating the progress made at the University of Pennsylvania School of Medicine will be held October 10-11. Attention will be directed to the following recent medical developments: erection of the Martin Maloney Memorial Medical Clinic Building; establishment of the Eldridge R. Johnson Foundation for Research in Medical Physics; establishment of the Edward B. Robinette Foundation for Research in the study, treatment and prevention of diseases of the heart and circulatory system; the reestablishment of the Pepper Laboratory for Clinical Medicine and of the John H. Musser department of research medicine; the affiliation of the Pennsylvania Hospital with the Institute of Mental Hygiene, affiliation with the Children's Hospital, the endowment for the Shipps Institute for the Study, Prevention and Cure of Tuberculosis, the merging with the pathologic department of the school of medicine; the completion of the new graduate hospital building; the acquisition of the diagnostic and Howard hospitals and the North American Sanatorium and the completion of the new laboratories of anatomy and physiochemistry. Honorary degrees will be conferred by the university on Sir Walter Fletcher of London, executive secretary of the Research Council of Great Britain, and Prof. A. V. Hill, Institute of Physiology, University College, London. The latter will be present at the invitation of the Eldridge R. Johnson Foundation for Research in Medical Physics. The University of Pennsylvania School of Medicine was the first medical school in America. The first member of the faculty was Dr. John Morgan, who was appointed professor of the theory and practice of physic, and later Dr. William Shippen was added as professor of anatomy and surgery. In 1768, Dr. Adam Kuhn was elected professor of botany and materia medica, and in 1769 Dr. Benjamin Rush became professor of chemistry. The university was the first American university to have a teaching hospital and the first to establish a comprehensive graduate school of medicine and

the first to have a department of research. The anniversary ceremonies will be in charge of a committee of which Dr. George E. de Schweinitz, emeritus professor of ophthalmology at the university, is chairman.

New York Homeopathic Medical College

It is reported that this college is to receive thirty-five of the two hundred shares of the Wendel-Swope estate in New York. This great fortune is estimated at one hundred million dollars, or more. That means that something over seventeen million dollars will come to this institution. This will become effective on the death of an only surviving sister.

The will further provides for an immediate gift of two properties at Nos. 1 and 3, Third Street, New York City.

The Wendel family have been frequent contributors to this college and Flower Hospital for more than forty years. At one time Georgiana Wendel was a special student in the college.

University of Louisville School of Medicine

The affiliation of the Children's Free Hospital with the School of Medicine has been announced.

The new agreement provides that the medical staff be appointed by the Board of Directors of the Hospital on nomination by the University of Louisville trustees. The university is granted the use of the hospital equipment and laboratories for purposes of teaching and research. A training school for nurses is a part of the general set up.

University of Texas Medical Department

The board of regents of the university has authorized the expenditure of $350,000 to enlarge the laboratory building of the medical school in Galveston.

General News

University of California Medical and Dental Library

Arrangements have been completed for the consolidation of the libraries of the medical and dental schools of the University of California on the Parnassus campus in San Francisco. The combined libraries will be housed in a completely remodeled library room in the medical school building and will be conveniently located and arranged for the students and staffs of the various departments of the University of California on the Parnassus campus. The combined medical and dental libraries will place the resources of over 35,000 volumes and over 450 current periodicals relating to medicine and dentistry at the disposal of the two professions in the state of California. A packet library service is provided by which any properly qualified physician or dentist or medical or dental institution may obtain books for a ten-day period subject to carriage charges. In order to make the library as useful as possible to those who desire to work in it, the books have been arranged in cubicles so that all of the significant literature relating to a special field may be found close at hand to the table at which the individual may be working. The total number of medical and dental periodical files, exclusive of government and institutional reports, numbers over 750 titles of which more than 300 are in complete sets.

School of Tropical Medicine in Sydney

The new School of Public Health and Tropical Medicine was opened in Sydney. It will carry on the work of the School of Tropical Medicine, which has been in existence since 1907 at Townsville. It is housed in its own building with the grounds of the University of Sydney, close to the medical school. Erected at a cost of £35,000, it provides for departments of parasitology, entomology, bacteriology, pathology and chemistry, while sections dealing with physiology, industrial hygiene, epidemiology, vital statistics and sanitary engineering are contemplated. It will be under the control of a council composed of representatives of the commonwealth government and the University of Sydney. Dr. Harvey Sutton has been appointed director. It will provide especially for the graduate training of public health personnel but will also include special nonmedical courses of school hygiene in the diploma of education and of tropical hygiene in the diploma of anthropology. The courses for the diploma in public health and for the diploma in tropical medicine have already been commenced, and a diploma of tropical hygiene is contemplated. A library to deal with public health and tropical medicine is being built up from a nucleus; previously existing at Townsville, which, it is hoped, will be complete in all Australian aspects.

Fellowships in Psychiatry and Psychology

The Institute for Child Guidance has offered six one year fellowships to qualified psychiatrists desiring to enter the child guidance field, three to be available in the spring and three in the fall. Applicants must possess an M.D. degree from a class A medical school and be adequately grounded in the fundamentals of psychiatry. Stipends of approximately $2,500 are awarded. The institute also

announced three one year fellowships to properly qualified psychologists who have a thorough grounding in the fundamentals of psychology, who have mastered the technic of mental testing and who have at least a master's degree. The stipend is $1,500 a year. The studies to be taken up will be a cooperative enterprise between psychiatry, psychology, social service and general medicine. Further information may be secured from Dr. Lawson G. Lowery, director, 145 East Fifty-seventh Street, New York.

Fellowships at Rush Medical College

Frank Billings, for many years professor of medicine and dean of the faculty, has given $100,000 to establish four fellowships. They are to be named in honor of Drs. Edwin R. Le Count, professor of pathology, Ernest E. Irons, dean and professor of medicine, and Wilber E. Post, and Rollin T. Woodyatt, clinical professors of medicine.

Johns Hopkins University Research Funds

The Rockefeller Foundation recently contributed $887,500 to Johns Hopkins University to be given over a period of ten years for the increased support of the biologic sciences, and $100,000 for "research in the humanities." The fund for the biologic sciences is given in this form: $387,500 over a period of ten years and $500,000 at the end of this period. The work in biology is being done by the following men: Raymond Pearl, Ph. D., director of the Institute of Biology, which has been financed over a five year period ending this year. Dr. Pearl will become professor of biology in the School of Hygiene and Public Health at the beginning of the next scholastic year; Herbert Spencer Jennings, Henry Walters professor of zoology and director of the zoological laboratory; Duncan Starr Johnson, professor of botany and director of the botanic laboratory; Burton Edward Livingston, professor of plant physiology and director of the laboratory of plant physiology. The fund for research in the biologic sciences makes possible the continuance of work which Dr. Pearl was doing in the institute of biology and which he will now do in the school of hygiene, also the continuance of certain work being done in connection with the Carnegie Institution of Washington.

Susie Friedlander Fellowship

A $500 fellowship in the Graduate School of Arts and Sciences for the year 1930-1931, to be known as "The Susie Friedlander Fellowship in Applied Psychology," has been created by Dr. Alfred Friedlander, professor of medicine, University of Cincinnati College of Medicine, as a third memorial in the University of Cincinnati in honor of his daughter, the late Miss Susie Friedlander. Members of the Friedlander family earlier offered the university a gift of $55,000, of which $40,000 was to create a permanent Susie Friedlander research fund in the department of psychiatry in the college of medicine, payable in five annual installments. The remaining $15,000 would be a minimum sum to endow a permanent Susie Friedlander fellowship in psychiatry in the medical college.

William J. Matheson Foundation

By the will of William J. Matheson, LL.D., formerly president of the National Aniline and Chemical Company, $600,000 is bequeathed for medical research. In 1927, Dr. Matheson is said to have provided funds for an international survey of epidemic encephalitis. In his will, dated Oct. 10, 1929, he bequeaths 4,200 shares of stock of the Corn Products Refining Company (with a present market value in excess of $400,000) to the William J. Matheson Foundation.

a corporation for charitable and educational purposes. The management of the foundation is authorized to apply the income to the encouragement and support of medical research and for any other charitable or educational purpose. One of its first activities, the will states, should be to take over or contribute to the expenses of the survey of epidemic encephalitis and similar research work now carried on by a committee of which Dr. William Darrach, New York, is chairman. The principal of a $200,000 trust fund is to be paid later to the Matheson Foundation.

Heidelberg's New Institute for Medical Research

In connection with its eighteenth public assembly, which was held in Heidelberg, May 26, the Emperor William Society for the Promotion of Sciences dedicated the newly erected Institute for Medical Research. The institute, which is located on the bank of the Neckar, combines four independent institutes: the Pathologic Institute, under the direction of Geheimrat [illegible]search. Professor von Krehl; the Institute for Physics, under the direction of Prof. Dr. Hausser; the Physiologic Institute, under Prof. Dr. Meyerhof, and the Institute for Chemistry, under Prof. Dr. Kuhn. The building is a three-storied brick structure, with beautiful lines. The central idea of the institute is the knowledge that the development of modern medicine is closely dependent on the progress of chemistry, physics and physiology. Eminent chemists, physicists and physiologists will undertake here, with a corps of assistants versed in medicine and the natural sciences, research in fields that lie between the sciences and medicine.

Max Pam Metabolic Unit

This unit for clinical research in diseases of metabolism was opened in July at the Michael Reese Hospital, Chicago, A capital fund of $150,000 is provided for maintenance. The unit will investigate metabolic diseases along physiological and chemical lines in cooperation with the Nelson Morris Institute of Research.

Personals

The doctorate of science was conferred at the commencement of the University of Pennsylvania on Alexander von Lichtenberg, professor of urology at the University of Berlin.

Charles Sheard, of the Mayo Foundation at Rochester, Minnesota, received the honorary degree of doctor of science at the commencement exercises of St. Lawrence University.

James Angus Doull, of the School of Hygiene and Public Health of the Johns Hopkins University, has been appointed professor of hygiene and public health at the School of Medicine of Western Reserve University, to succeed Roger G. Perkins, who is retiring at the end of the present year.

Alfred C. Redfield has been advanced to a professorship of physiology in the Harvard Medical School.

W. S. Leathers, professor of preventive medicine and dean of the Vanderbilt Medical School, has been elected a member of the board of scientific directors of the International Health Division of the Rockefeller Foundation.

Harvey Cushing, professor of surgery in Harvard Medical School, delivered the Lister Memorial Lecture before the Royal College of Surgeons of England in July.

The board of managers and the medical advisory board of the National Jewish Hospital at Denver gave a dinner on May 27 in honor of the seventy-fifth birthday of Henry Sewall, professor of medicine emeritus in the University of Colorado.

At Yale University, Mark A. May has been appointed director of the statistical bureau of the Institute of Human Relations. Walter R. Miles and Catherine Cox Miles, of Stanford University, have been appointed research associates in psychiatry and psychology. Both have been assigned to the Graduate School, the School of Medicine and the Institute of Human Relations.

Samuel T. Orton has been appointed professor of neurology and neuropathology at the Columbia University College of Physicians and Surgeons and Henry A. Riley has been appointed professor of neurology and neuro-anatomy.

Homer W. Smith, of University and Bellevue Medical College, is on leave of absence as Fellow of the John Simon Guggenheim Memorial Foundation to visit Siam, Sumatra and Borneo, where he plans to study kidney function, the composition of the body fluids and allied biochemical problems in fresh-water elasmobranchs and terrestrial fishes.

Henricus J. Stander, associate professor of obstetrics in the Johns Hopkins School of Medicine, has been appointed professor of obstetrics and gynecology in Cornell University and head of these departments in the New York Hospital, the appointments to become effective in September.

Earl D. Bond, who for several years has been medical director and physician in chief of the department of mental and nervous diseases of the Pennsylvania Hospital, has been appointed professor of psychiatry in the University of Pennsylvania School of Medicine.

Rustin McIntosh has been appointed professor of diseases of children in the Columbia University College of Physicians and Surgeons, New York Citly.

Louis N. Katz, assistant professor of physiology at Western Reserve University School of Medicine, has been appointed physiologist and director of cardiovascular research at Michael Reese Hospital, Chicago.

Charles A. Doan of the Rockefeller Institute for Medical Research has been appointed chairman of the new department of medical and surgical research established in the Ohio State University College of Medicine.

Frank P. Graham, professor of history in the University of North Carolina, will succeed H. W. Chase as president. Dr. Chase is now president of the University of Illinois.

George E. Shambaugh, professor of otolaryngology in Rush Medical College, received the honorary degree of doctor of science from Illinois College.

Alfred F. Hess, clinical professor of pediatrics in the University and Bellevue Hospital Medical College, was awarded the degree of doctor of science by the University of Michigan.

M. T. Townsend, associate professor of histology in the University of Oklahoma Medical School, has been appointed head of the department of biology at Illinois Wesleyan University.

Fielding H. Garrison, librarian of the William H. Welch Medical Library of Johns Hopkins University, has been appointed resident lecturer in the history of medicine.

Walter R. Fieseler, formerly medical supervisor of athletics at the University of Iowa, has resigned from the faculty of the college of medicine to become associate medical director at the University of Southern California next fall.

Stephen Poljak has been appointed assistant professor of neurology in the department of medicine at the University of Chicago.

Leybourne Stanley Patrick Davidson has been appointed to the regius chair of medicine in the University of Aberdeen to succeed P. Ashley Watson Mackintosh, resigned.

Dr. I'on Luten Weston was given the Ravenel award for his thesis on malaria. The award was established by Dr. Mazyck P. Ravenel, Columbia, S. C., in commemoration of the members of the Ravenel family who have contributed to science and medicine.

Charles Hugh Neilson and Daniel Martin Schoemaker, of St. Louis University School of Medicine, were honored at a dinner given by the administrative board of the university, June 4. This was the anniversary of twenty-five years of uninterrupted service of both men in the medical school. Dr. Neilson is the associate dean of the school of medicine and professor of internal medicine. Dr. Schoemaker is professor of anatomy.

Thurman D. Kitchin, who has been dean of and professor of physiology of the School of Medicine of Wake Forest College for many years, was recently elected to the presidency of the college.

Richard E. Scammon, professor of anatomy in the medical school of the University of Minnesota, has been appointed professor of anatomy in the University of Chicago.

Victor C. Myers, Ph.D., professor and head of the department of biochemistry, Western Reserve University School of Medicine, received the honorary degree of doctor of science from Wesleyan University, Middletown, Conn.

W. Edward Chamberlain, San Francisco, has been appointed professor of roentgenology and radiology at Temple University School of Medicine.

Ray Lyman Wilbur, Secretary of the Interior, received the honorary degree of doctor of laws at the recent annual commencement exercises of Princeton University.

Elias P. Lyon, dean of the University of Minnesota Medical School, was recently awarded the degree of doctor of science by the University of Southern California.

Jerome R. Head has been appointed associate in surgery at Northwestern University Medical School.

Lucien Allen Stamper was awarded the Ravdin Medal at Indiana University School of Medicine recently. The medal is presented by Dr. Marcus Ravdin, Evansville, to the senior in the medical school attaining the highest average during the four years.

G. Carl Huber, professor of anatomy in the University of Michigan Medical School, received the degree of doctor of science from Northwestern University.

John Cameron, professor of anatomy in Dalhousie University, has resigned because of ill health.

Clara Stoltenberg, professor of anatomy in Stanford University, has retired after 34 years of service.

Leo Loeb, professor of pathology in Washington University, St. Louis, spent the Summer at the Scripps Institute of Oceanography at La Jolla.

William Darrach, dean of the Columbia University College of Physicians and Surgeons, has resigned on account of ill health.

George Eastman, of Rochester, N. Y., has given $1,000,000 to the Italian government for the erection of a clinic and college in Rome.

Winfred Overholser, assistant professor of physhiatry at the Boston University School of Medicine, has been appointed to succeed Dr. Theodore A. Hoch as assistant commissioner in the state department of mental diseases.

Richard B. Dillehunt, dean of the University of Oregon Medical School, has been elected president of the governing board of the Portland Child Guidance Clinic Association.

L. S. Schmitt, associate dean of the University of California Medical School, has been appointed director of the university hospital.

In appreciation of service to the University of California Medical School by Dr. William Palmer Lucas, retiring head of the department of pediatrics, during the last seventeen years, members of his staff tendered a banquet and presented him a gold watch purchased with contributions from students of each of the seventeen classes.

Rodney H. Jones and Edward R. Mugrage, instructor and professor in clinical pathology, respectively, University of Colorado School of Medicine, were awarded a gold medal at the annual

meeting of the American Society of Clinical Pathologists held at Detroit recently. The award was for the best scientific exhibit present at the meeting. The exhibit concerned the Aschheim-Zondek pregnancy test.

Thomas P. Noble, formerly in orthopedic surgery in the Mayo Foundation, has recently returned to Great Britain after three years of service in the Medical School of Chulalongkorn University at Bangkok, Siam, and has just been appointed by the king of Siam for three years as head of the surgical service of the Siamese government.

Reginald D. Manwell of the School of Hygiene and Public Health of Johns Hopkins University has been appointed assistant professor of zoology at Syracuse University.

Alfred R. Shands, Jr., formerly of Washington, D. C., has been placed in charge of the orthopedic work in the Duke University School of Medicine and Hospital.

Deaths

Benjamin A. Thomas, professor of urology in the Graduate School of Medicine of the University of Pennsylvania, died in May, aged 51.

William M. Joyce, assistant professor of otolaryngology in Northwestern University Medical School, died in June, aged 54.

George Neil Stewart, professor of experimental medicine and director of the H. K. Cushing laboratory, Western Reserve University School of Medicine, died in May, aged 70.

George King, assistant professor clinical medicine at Columbia University College of Physicians and Surgeons, died in May, aged 36.

Ralph W. Webster, clinical professor of medicine in Rush Medical College, died of carcimonia of the colon, July 2, aged 57.

James McD. Patton, professor and head of the department of ophthalmology in the University of Nebraska College of Medicine, died in June of angina pectoris, aged 53.

Arthur A. Law, associate professor of surgery in the University of Minnesota Medical School, died in July, aged 58, of nephritis.

John B. Ellis, associate clinical professor of ophthalmology in Rush Medical College, aged 55, died suddenly in July of coronary thrombosis.

Edmund T. Browne, professor of diseases of the eye, ear, nose and throat in the University of Vermont College of Medicine, died, aged 58, of coronary thrombosis and arteriosclerosis.

John K. Scudder, for many years secretary of the Eclectic Medical College of Cincinnati, died, aged 65, of heart disease.

Abstracts of Current Literature

Full-Time System of Teaching

1. From the Standpoint of a Full-Time Teacher:

In a full-time system of teaching in a clinical department a predominant part of the instruction is conducted by professional teachers in contradistinction to practitioners or consultants in medicine. Many detailed courses in the methods of examination and in the diagnosis and treatment of disease must be offered in the curriculum.

To meet all of these requirements, a large staff is necessary. Men of the most diverse talents may be utilized. For most schools under the present conditions, a full-time system in this strictest sense is not feasible because of the enormous expense. Furthermore, it is probably undesirable since it would tend to increase the isolation of a teaching department.

On the other hand, it seems necessary that the director or chief should be in every sense a professional teacher. The responsibilities of private practice in the ordinary sense are entirely incompatible with the other requirements of the directorship. Occasional consultations are inevitable. It is essential that the salary for the position should be sufficient to remove all real necessity for individual fees.

The chief can do only a fraction of the work of the department and must have a number of mature assistants who will be the leaders in the clinical work of the ward and outpatient departments, the teachers of important courses, the investigators capable of stimulating and guiding younger men. Whether they are to be on a full-time or part-time basis will depend much more on the local situation than on any principle. Complete support should be provided the younger men holding fellowships, instructorships and positions in special laboratories and clinics. These men must be selected with the greatest care and because of outstanding promise. They should be imbued with the investigative spirit and should reflect most accurately the aims and vision of their institution.

A second and greater danger which threatens professional teaching in medicine is a misinterpretation of the significance and scope of clinical research. To students and young assistants who have had long training in fundamental sciences, research may naturally connote work in a physiologic, chemical or bacteriologic laboratory. To medical teachers of longer experience, it is apparent that the chief laboratories of a department of medicine are its wards and clinics and that its proper studies are the patient and disease. Investigation should usually start at the bedside but may be pursued in any direction that curiosity may lead. While important investigative accomplishment should be the chief criterion for advancement in the department, it should not be the only one. It should be a principle that the courses and the conduct of the wards and clinics shall be in the hands of the men best qualified for the work and entirely without regard to full or part-time status or academic rank. In this way one may obviate the distressing combination of circumstances by which the brilliant laboratory investigator whose whole thought is centered on the solution of his problem can be dragged into routine teaching and ward work to which he gives at the time only half-hearted interest. Incidentally the patients will escape the care of a man whose thoughts are elsewhere and the students will be spared the spectacle of inexperience in the wards.

Critics of professional teaching in clinical departments have often said that it prevented the teachers from realizing the conditions of private practice to which their students would be exposed. This possibility is apparent and to a certain extent is inevitable in any academic department. There are now, however, several factors which tend to minimize it. The teaching of graduate students is bringing the departments into closer touch with the needs of the practitioner. Furthermore, the medical services in outpatient departments are undergoing a most significant change. In the past, dispensaries and outdoor departments of hospitals devoted almost their entire time to the dispensing of drugs, to the care of emergencies and to the admission of patients to hospital wards. During the last few years they have been transformed into institutions of medical service where the best of all that modern medicine can offer is brought to the care of the individual patient and where conditions simulate the best type of private practice or in some cases even reflect what it should be. In the program for improvement, professional teachers of medicine should take an active if not a leading part.—DAVID P. BARR, *J.A.M.A.*, May 10, 1930, p. 1508.

II. FROM THE STANDPOINT OF A HALF-TIME TEACHER.

The policy of medical teaching in school and hospital can still be best directed by a teacher trained as a clinician with a certain amount of laboratory experience rather than by one trained as a laboratory worker with comparatively little clinical experience. Medicine is still an art to be learned by practice and cannot be learned in the laboratory. It is important, therefore, for the sake of the teacher's own development, if for no other reason, that he engage in a certain amount of actual practice. If one feels that the professor of medicine should know clinical medicine and if he is expected to maintain the leadership of his group in clinical acumen and wisdom, arrangements must be made to allow and even to urge him to engage in some practice lest he get rusty. On the other hand, if the professor of medicine is no longer required to know clinical medicine and is employed more definitely as an administrator and director of research, he will be forced to delegate much of his clinical teaching to others. In this event, if the premise is granted that clinical medicine shall be taught by clinicians, the so-called clinical professorships will become increasingly interesting and desirable. The clinical professor will be the man with the widest clinical knowledge and the greatest influence. He will have the pleasure and responsibility of teaching the practical medicine that is taught. The titular head of the department will shrink more and more into his shell of research and administration. There are never many positions vacant at any one time at the top of the professional tree. The financial reward after getting one of them is not great. The professor not on a full-time basis has the advantage of being able to apply his earning capacity in a practical way that the full-time professor cannot. If he is conscientious, however, I doubt whether he has time in which to earn much more than his full-time brother professor is paid. But at least he has an untrammeled sense of freedom.—REGINALD FITZ, *J.A.M.A.*, May 10, 1930, p. 1509.

III. FROM THE STANDPOINT OF A PRACTITIONER AND TEACHER.

Shortcomings of the full-time system are matters of distortion which will largely disappear with the proper selection of departmental heads and personnel. Fully 92 per cent of our medical graduates go into practice. To entrust their training to men who have never had first hand experience with private practice, and who without such experience are likely to be out of tune with its

problems, is as an educational policy open to serious criticism. Measures should be taken to make department headships attractive to men of sound scientific training who have actually seen something of medical practice.—ARTHUR D. DUNN, *J.A.M.A.*, May 10, 1930, p. 1509.

Educational Influence of Pathology on House Officers in a Teaching Hospital

The hospital can well be thought of as a graduate school and the house officers "so dealt with that the mere acquisition of knowledge shall not crush originality of intellectual endeavor." The student in his medical school is in a sheltered microcosm, with his time plotted as in a railroad schedule and his studies arranged and guided for him by his instructors. Even in the most liberal curriculums he has but little freedom of choice. One of the functions of his school is to save him time and effort in the selection and assimilation of those facts and well established hypotheses prepared by his predecessors. His predilections and interests may emphasize certain fields of study to his own well being, but he must cover his field with philosophic breadth and so far as his work in pathology is concerned must harmonize it with the systematized whole.

His cosmos in the hospital is broadened as his more intimate contacts with the staff, with his fellows and with the patients necessitate. His intellectual efforts acquire a greater freedom in accord with his capabilities. Pathology occupies a larger share of his thought than is ordinarily true when he goes into practice. What pathology brings to him in the hospital depends on the professional pathologist, the group of interested clinicians and himself.

The professional pathologist in the hospital therefore has a heavy responsibility for the welfare of the house officers, which only a genuine enthusiasm for the place of pathology in medicine will enable him to meet. His end can be gained by humility and enthusiasm, humility in the face of an ever broadening field of problems and enthusiasm in the effort to solve them. The hospital house officer will profit from a study of pathology in the institution in accord with his own interest, that of his chiefs, the material which both provide for study and the intelligence and enthusiasm of the pathologists. Occasional house officers serve in order to prepare for a career in pathology. Others spend a period of their clinical internship in the laboratory. Others visit the laboratory freely. Still others enter the laboratory to secure enlightenment on materials from their patients. Occasionally interns confer with the pathologists to discuss the diagnosis and treatment of their patients, or to consult in regard to scientific problems. In spite of insistence on the conception of the hospital period as educational in the sense of the graduate school, its vocational aspects cannot be overlooked.

The house officer in pathology, looking forward to a career in that subject, is all too ready to concentrate on methods and materials. As a balance against this tendency he should be encouraged to find a place in nature for the phenomena he observes and also to consider their bearing on disease in the living. The house officer working in pathology as a preparation for or as a part of his clinical internship has no need of encouragement to look for its clinical application. In his case the urge to make all the factors "practical" may lead him to lose sight of his primary objective, namely, the study of the nature of disease. The value to be obtained from periods of different length spent in the laboratory cannot be calculated mathematically, but the worth progresses more nearly in geometrical than in arithmetical proportion.

If imbued with the spirit of scientific curiosity, the pathologist may, in addition to imparting the results of immediate ob-

servation, instil a like curiosity in the house officers of all classes. Case reports of especial interest can be placed in the literature, for their own sake and for the collection of data when a sufficient number justifies organized and statistical examination. Material on a given condition may accumulate in the laboratory in adequate amounts for investigative compilation. The place of the intern in these investigations depends on his desire to enlarge the sum of human knowledge, his ability to make exact observations and occasionally on his constructive imagination. His qualifications to take part in research, other than initiative and industry, rest on his capacity to make and record the observations required. His routine as an intern generally precludes the learning of intricate technical methods, nor can his research depend on great experience. In encouraging him to investigation his senior must adapt the problem to the house officer's limitations and not impose difficulties of technic that will serve either as a diversion from the objective of a general training or as a source of discouragement. If time and training permit only the preparation of case reports, energy is not wasted, for these have a general value and accustom the house officer to the library and its stores, thus preparing him to consult original sources when he is no longer sheltered in the fold of the hospital.—H. T. Karsner, *J. A. M. A.*, April 5, 1930.

Fundamentals of Obstetric Teaching

If we are to assist in the development of the average medical student, we must utilize every known teaching device to force him to do his own thinking. Unless we illustrate our lectures and recitations with models, charts and moving pictures and our laboratory courses with numerous gross pathologic specimens, and supplement the manikin exercises with practical instruction in pelvimetry and palpation of the pregnant woman, we cannot hope to develop the undergraduate student. This requires time far in excess of that now allotted by the Association of American Medical Colleges to instruction in obstetrics; moreover, sufficient clinical material can be found only in large and well equipped women's clinics developed for the purpose.

Our students do no practical work until they have had 98 preparatory lectures and demonstrations in the third year, given by the senior professor. In the fourth year, each one is assigned to the outpatient department and wards of the combined departments of obstetrics and gynecology for five and one-half weeks of whole time work for practical instruction.

In the obstetric clinics, the student learns prenatal and postnatal care, and palpates and measures the pelves of pregnant women. In the gynecologic clinic he learns what havoc can be created by poor obstetrics. In rotation he attends twenty-two labors and is also called to see all the cases of dystocia that occur in his five and one-half weeks of service. He attends staff rounds, sits in the weekly review of all complicated cases, studies pathologic tissues, is drilled in manikin exercises, and is quizzed biweekly on assigned reading in obstetrics.

Yet this method is not ideal because the student is in closest contact only with junior staff officers. Had he not had 98 hours of didactic teaching in his third year, he would not have been prepared for this clinical instruction. The course is entirely too short to make an obstetrician. Obstetric patients may present problems that are medical, surgical or obstetrically surgical. The student can be taught much concerning his patient by the other teaching departments that aid in the treatment of pregnant women with medical and surgical complications. Yet it is usually well nigh impossible to train an undergraduate student sufficiently in obstetric pathology so that without sup-

plementary work he could intelligently care for pregnant women.

He can scarcely be trained to handle normal obstetric cases after participating in the delivery of twenty-two cases which is required of the student in the University of California Medical School. Unless he is taught in obstetric lectures how to correlate what he has learned in anatomy, physiology, biochemistry, pathology and general medicine, he can never think himself out of the maze in which a patient with complications could enfold him. Students must be taught to think and how to apply their knowledge, because even the ninety-eight preparatory obstetric lectures that we give in San Francisco are inadequate to cover properly the fundamentals of obstetrics.

A student, unless he takes a rotating service that includes obstetrics, or serves a term as intern in some maternity hospital, may enter general practice without ever having seen a difficult forceps operation. If he goes to the country to practice, the chances are that he will be so placed that he cannot obtain proper obstetric consultation if his patient develops complications while in labor.

We will not make headway in our problem until medical school authorities realize that it is unfair to the public if they recommend men for state board examinations unless they have attended, delivered and followed during the puerperium a minimum of seventy-five women. —Frank W. Lynch, *J. A. M. A.*, May 17, 1930.

Clinical Teaching of Obstetrics

The course in obstetrics should extend over two years of the medical course. A constant review of the anatomy and the physiologic functions of the parts involved in our instruction is a vital necessity in successful clinical teaching. The living subject and fresh specimens are much more useful demonstration material than museum specimens, charts or histories of old cases. Living clinical material in sufficient quantity is necessary to a course in clinical obstetrics. This necessitates both an outdoor and an indoor clinic, with enough hospital beds at least to take care of the pathologic cases that may appear in the clinic. Each of these must be manned by a staff sufficiently large and sufficiently interested in teaching medical students. Photography, including moving pictures, may be made a much more useful aid to obstetric teaching than it has been heretofore. The course in obstetrics should be allowed at least 200 teaching hours, in addition to any time spent by the student in attendance at deliveries.—J. M. H. Rowland, *J. A. M. A.*, May 17, 1930.

Facilities Required for Teaching in Hospitals Affiliated with Medical Schools

At the University of Minnesota a building has been finished where certain features have been incorporated after a study of the newer developments in the hospitals in medical schools over the country. This particular section is the children's hospital, endowed by a gift of $2,000,000 which will provide its maintenance. The section contains the outpatient department on the lower three floors and the hospital on the upper two floors. It is used for the students' health service, the lower two floors being for outpatients, and the upper two floors for the hospital. The building cost $890,000, or 41 cents per cubic foot, and our per capita cost is about $4 a day. It is important in teaching hospitals that we bring down the cost of hospitalization. We planned the outpatient department with a view to using all departments for more than one service. In building the amphitheater, we were anxious to get the patient as near the students as possible.—Paul H. Fesler, *J. A. M. A.*, April 19, 1930.

Study of Medicine in Sweden

What is most characteristic for the study of medicine in this country is undoubtedly the fact that the students are to the greatest possible extent allowed to take active part in the treatment of the sick, and not left to be merely passive auditors and spectators. The clinical studies begin with internal medicine. At a medical clinic in a large city hospital with a great number of heart and pulmonary cases, a group of thirty students begin their clinical studies. For three months they are given practical and theoretic instruction in the use of percussion, auscultation and other clinical methods of examination. This same group then continues its work for six months at one of the medical clinics of the university, and after that works for six months at one of its surgical clinics. In all these fifteen months, which are interrupted only by vacation, the students attend the lectures and demonstrations of the instructors at the clinics and policlinics, and also take part themselves in the treatment of the sick. At the clinics, the students, divided into smaller groups, do duty as a sort of junior assistant. Each one is given a certain number of patients whom he is to examine at the time of their admission to the hospital, and of whose cases he is to keep records. During the patient's entire stay, the student observes his symptoms carefully, and under certain conditions gives him treatment, always, of course, under the leadership and control of the physicians of the clinic and the professor in charge. At the policlinics, the students are also divided into groups, and examine and treat the patients, here too under the oversight of the older physicians.—(Hjalmar Forssner, Acta Obstetricia et Gynecologica Scandinavica, Vol. 10, No. 2).

Teaching of Obstetrics in Sweden

At the obstetric clinic of Karolinska Institutet we have annually about 3,400 to 3,600 deliveries at full term, that is, about ten a day, and five to six hundred miscarriages. Twenty-five students are received at one time, and are given instruction for four months. For the four months they are strictly forbidden to occupy themselves with any other department of medicine, in other words, they are expected for these months to apply themselves exclusively to the practical and theoretic study of obstetrics and gynecology. They are also expected to live in the hospital, which provides rooms for them without cost, and meals at a low rate. This system has the great advantage of allowing the student to see and take part in everything that happens both day and night, which is of particular importance in an obstetric clinic.

Half of the students belong to Ahlstrom's clinic, and half to mine. Every other morning, he and I alternate in giving clinical instruction with demonstration and discussion of patients delivered during the preceding day. Naturally, all the students, irrespective of the clinic to which they belong, hear us both lecture and take part in all the instruction, which must of necessity be given at all and any hours of the day or night in connection with the deliveries. The theoretic instruction in lectures is given alternately two months at a time by Ahlstrom and myself. During our vacations, our place as instructors and heads of the clinics are taken by assistant professors.

Every other month, new students are received who spend their four months at the clinic, the first two months as junior students, the last two as seniors. Each day, two seniors and three juniors are chosen to do the work in the delivery wards.

All patients received during the day are taken care of and treated by these students with the assistance of trained nurses, and under the leadership and

supervision of the assistant physicians and heads. There are no midwives at this clinic; their work is performed by the students.

The junior students give the parturients aseptic treatment and keep them under observation, keep the records, give anesthetics and otherwise assist the senior students. The latter deliver all normal cases, and carry the responsibility for them. One of the assistant physicians is always within reach, and he pays frequent visits to the ward to see that every thing is as it should be. At any delivery which in the least deviates from the normal, this physician is called, and he remains present during the delivery, or takes it over entirely. In serious cases, he calls the head.

When the delivery is over and the patient taken to the confinement ward, trained nurses take charge of mother and child, but the student who has made the delivery keeps the record of the confinement.

The students also take turns at the obstetric outpatient department, and thus become acquainted with the course of normal pregnancy and the diseases appearing during pregnancy.

In this way, the students learn theoretically and practically about pregnancy, delivery and confinement, both normal and pathologic. They have the opportunity of seeing any complications, and to some extent, and with the proper supervision, of treating themselves. As a rule, the student that has had his four months' course has made forty or fifty deliveries, treated six to eight miscarriages, and made two or three forceps deliveries or other operations, all under the supervision of an older physician. In gynecology, the students also take part in the examination of patients both at the clinic and the dispensary, assist in operations, radium treatment, and all kind of treatment.—(Hjalmar Forssner, Acta Obstetricia et Gynecologica Scandinavica, Vol. 10, No. 2).

Nebraska Medical Student Loan Fund

Constructive legislation by the House of Delegates at the recent annual session created a medical student loan fund. Every member of the Nebraska State Medical Association will be interested in this new by-law and in the possibilities it promises for good in future years. While the fund starts with a paltry five hundred dollars it is to become a revolving fund and in ten years will be quite worth while. The text of the by-law follows:

Section IX. The Committee on Medical Student Loan Fund shall consist of three physicians in active practice, to be elected by the House of Delegates for terms of three years; except, that in the beginning one shall be elected for one year, one for two years and one for three years. There shall be appropriated annually from the general fund of this Association, if current finances justify such appropriation, the sum of five hundred dollars to be known as a Medical Student Loan Fund, which sum may be used by the committee to assist worthy, needy medical students of above average scholarship, residents of Nebraska, members of the Junior or Senior classes of the University of Nebraska College of Medicine or of the Creighton University College of Medicine, or Interns from these colleges; the money so used to be allocated equally as nearly as may be possible to students of the Nebraska University College of Medicine and the Creighton University College of Medicine. This money is to be loaned to the students at the option of the committee and shall draw interest at the rate of six per cent until the principal and interest are paid. When such money is paid back to the Fund it shall

become a part thereof to be again used for assisting needy students as in the first instance. The Committee shall make a report of its activities at the end of each fiscal year.

The committee elected to administer this fund consists of Drs. F. A. Long, H. J. Lehnhoff and A. P. Overgaard.—(Nebraska State M. J., July, 1930, p. 287.)

Medical Education in Ukraine

Since the revolution of 1917, medical education in the Ukraine has passed through several changes. The medical faculties of the universities formed autonomous administrative units—medical institutes. This reform led to an increase in the number of students and professors. This was the situation until 1929, when it became clear that the need of the population, especially in the country, for physicians could not be satisfied by the existing medical institutes and that it was necessary to increase their number.

With this purpose in view, a reorganization of medical institutes began in January, 1930. They are now named institutes of protection of the people's health. The course now comprises four years instead of five, as it was formerly. These institutes are going to pass from the People's Commissariat of Education to the jurisdiction of the People's Commissariat of Health. The former will keep only the methodological direction of the institutes. This circumstance is of great importance. It will bring soviet medicine much nearer to its source.

The new medical institutes will turn out intensive specialists instead of general practitioners as before. In connection with this, each institute for the protection of the people's health will be divided into four faculties: medical, sanitary-prophylactic, odontologic and security of mother and childhood (gynecologic). Before, each medical institute had only one faculty.

Students will begin to specialize from the third year of training. More attention will be given to practical studies, which will last throughout the year. From the third year the students must pass their two months of vacation in the country hospitals learning the technic of medicine and getting acquainted with the conditions of work and life in the village and with the work of a doctor in the "country medical district."

Students will be received in the institutes three times a year, so that studies will continue throughout the year without interruption. These institutes, like other high schools of the Ukraine, will be conducted on the full week plan. Every fifth day is a holiday, whether or not it is a Sunday, a church holiday or a simple week day. But the work goes on uninterruptedly. There is no general holiday, with the exception, of course, of five state holidays, each group having its own rest day.

Included in the number of required subjects is the study of one foreign language, in most cases German, and also physical culture. Examinations are abolished. Instead of them the seminary method will be used, which makes it possible to verify the knowledge of the students much more regularly and frequently.

All these changes, as well as others, demand much energy from the mass of students and professors for the execution of the academic plans. The People's Commissariat of Health believes that within a short time this reform will fully satisfy the need of the population of the Union of Socialist Soviet Republics for physicians.—(*J. A. M. A.*, July 19, 1930.)

Book Reviews

B. Westermann Co., Inc.

For eighty years these importers of medical books have served medical teachers and research workers. Keenly alive to their functions, they have established an exclusive medical branch at the Medical Center in New York City and offer their assistance to all who are interested in foreign medical publications.

Cancer of the Breast

By William C. White, M. D. Harper & Brothers, New York. 1930. Price, $3.00. The author discusses the etiology, symptoms, diagnosis and treatment—surgical and by irradiation. The section on pathologic technic is of considerable value to the student because it treats of things that he can do. The references appended to each chapter are very helpful.

Uterine Tumors

By Charles C. Norris, M. D. Harper & Brothers, New York. 1930. Price, $3.00.

Diagnosis is emphasized and tests for the detection of these tumors in their early stages are stressed. While major operative technic has been largely omitted, the most satisfactory forms of treatment for the various types of uterine tumor, the indications and contra-indications, are discussed adequately. Several thousand cases are the basis of discussion. A splendid survey of a highly important clinical entity.

An Introduction to Vertebrate Embryology

By H. L. Wiemann. McGraw-Hill, Indianapolis. Price, $4.00.

An initial chapter on development orientates the student for an account of cytology in general, the development and union of the germ cells, the formation of the germ layers and embryonic organs in Amphioxus and the Frog. The rest of the book is devoted to the embryology of the chick and of the mammals, pig and man. The point of view is modern not only in that it is comparative throughout the text but also because the author has drawn freely on the data of general physiology and experimental embryology —a combination unique among existing texts. Thus he builds upon other subject material most profitably given in the introductory or survey course in zoology. Excellent typography and illustrations further assist the student in gathering the embryological viewpoint. In short, this is an especially good book for the type of preparation at which it aims.—(N. M. Grier.)

Harper's Medical Monographs

I. Uterine Tumors. By Charles C. Norris, M.D. II. Cancer of the Breast. By William C. White, M.D. Harper and Brothers, New York, 1930. Price, $3.00.

A complete survey of the subject presented concisely, clearly and authoritatively by a master; containing a mine of valuable information, based largely on personal experience and study, hence a splendid addition to a small, select, reference library. The size is convenient for carrying in one's pocket.

Physical Diagnosis

By Richard C. Cabot, M.D. 10th Ed. William Wood and Company, New York 1930. Price, $5.00.

This book is so well known among teachers that it hardly needs an introduction. Students have used it for many years, and now that the teaching in

physical diagnosis has been given a position of greater weight in the curriculum, it should be well received by both teacher and student. Its comparatively small size and low price are an additional appeal to medical students. Revision has been made and new material added to bring the book up to date.

Infant Nutrition

By W. McKim Marriott, B.S., M.D. C. V. Mosley Company, St. Louis, Mo., 1930. Price, $5.50.

This is a summary of present day knowledge concerning nutritional requirements of infants under normal and pathological conditions and indicates the effects of failure to meet any or all of these requirements. The chemical pathology of the body as related to feeding and nutrition is stressed. Numerous clinical protocals illustrate the more common nutritional problems. Details of the management of cases described are given. Chapters on therapeutic procedures and on medication in infancy are included. Clinical experience takes precedence over laboratory findings. The student will find this book one of great value.

Synopsis of Surgery

By Ernest W. Hey Groves, M.S., M.D. 9th Ed. William Wood and Company, New York, 1930. Price, $5.00.

The well known outstanding features of this book have been retained and a number of sections have been rewritten in large part, notably those on shock, spinal anesthesia, fractures of the neck of the femur and tumors of the bladder. Among the newly added chapters are those on the injection treatment of varicose veins, tuberculosis of the bladder, osteomyelitis and the Orr treatment of compound fractures. The book has slowly increased in size but retains its excellence as a study text for the undergraduate. It is a veritable "multum in parvo."

Manual of Diseases of the Eye

By Charles H. May, M.D. 13th Ed. William Wood and Company, New York, 1930. Price, $4.00.

All those who favor small, handy, concise text for ready reference, but full of useful material will welcome this edition of a favorite book for students. It is up to date and contains everything that the young graduate should know about the eye.

A Shorter Surgery

By R. J. McNeil Love, M.B., M.S., F.R.C.S. (Eng.) 2d Ed. William Wood and Company, New York, 1930. Price, $5.00.

This book is another addition to the already numerous short, condensed texts offered the undergraduate student. It omits most of the matter that is irrelevant to surgery being strictly a part of general pathology and bacteriology. All topics are discussed concisely yet no omissions are evident on rapid examination. Operative procedures are described briefly but clearly. The book offers itself as another choice among the "shorter" texts on surgery for students.

Diseases of Women

By Ten Teachers under the direction of Comyns Berkeley, M.A., M.D., M.C. (Cantab.), F.R.C.S. (Eng.) 4th Ed. William Wood and Company, New York, 1930. Price, $6.00.

The names of Berkeley, Fairbairn, Andrews, Bonney and White, among others, are warranty of the excellent value of this book, and its comparatively small size should make a strong appeal to the medical student who today is compelled to do so much reading in many fields in order to prepare himself for general practice.